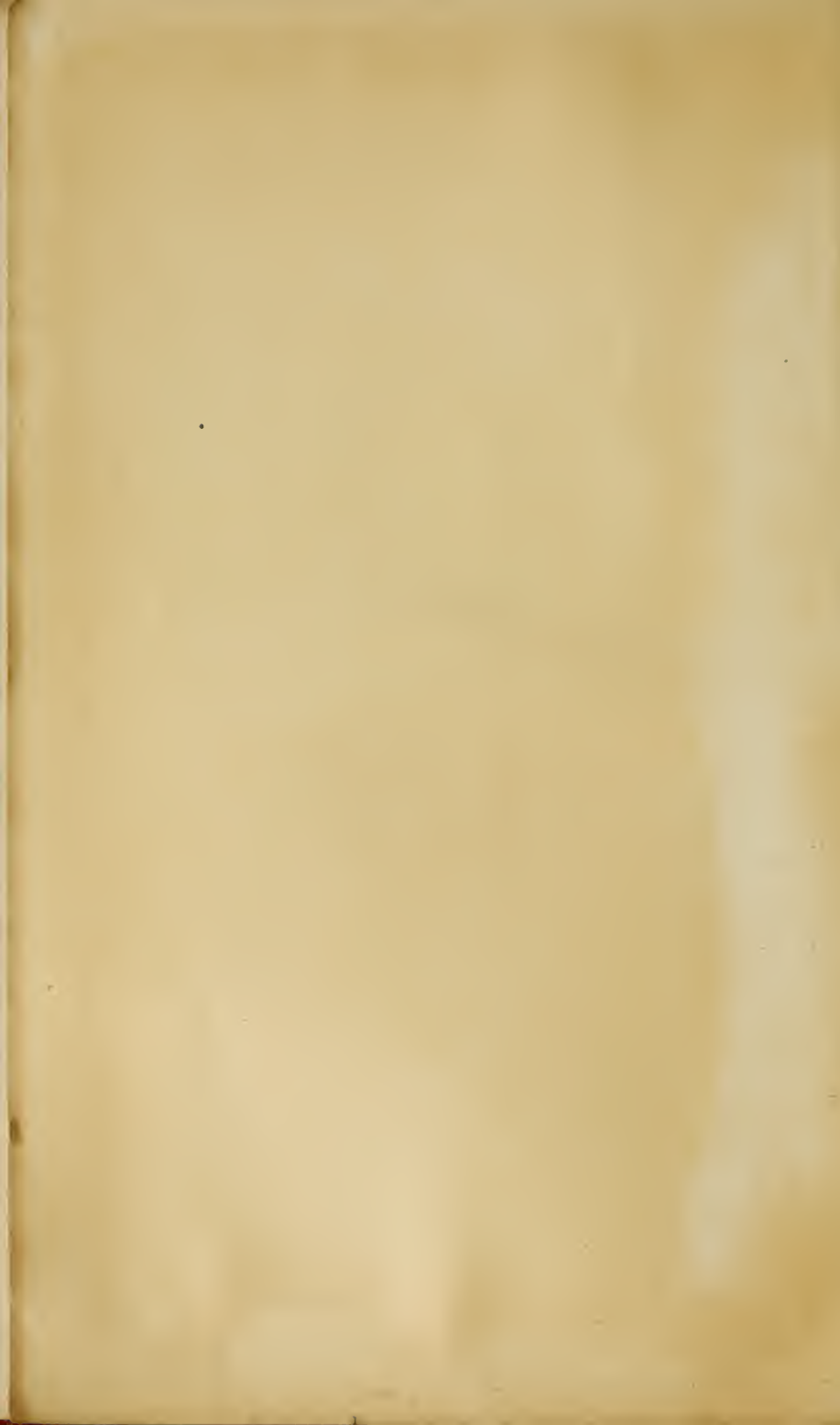








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THE COLUMN AND THE ARCH

THE COLUMN AND THE ARCH

ESSAYS

ON ARCHITECTURAL HISTORY

WITH ILLUSTRATIONS

By

WILLIAM P. P. LONGFELLOW



NEW YORK

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PREFACE

Some of these essays have been already printed, and I have to thank the proprietors of the *American Architect* and the *Architectural Record* for permission to repeat them here ; others of them appear now for the first time. I have brought them together with the wish to trace in sequence the main thread that binds the successive phases of European architecture, and the evolution of the two leading features of its forms, the classic order and the arch. I have passed by the Byzantine style because it was a collateral development, and outside the cycle which, beginning with Greek architecture, returned upon itself in the Renaissance. For a like reason I have touched but lightly on the Gothic, a splendid growth that structurally was the completion of the Romanesque, but, as a matter of form, was *hors de ligne*, like the Byzantine, and like it had no successor ; for the logical predecessor of the Renaissance was the Romanesque, and the development of the older forms was finished when that merged in the pointed Gothic.

While I have made the essays historically con-

secutive and have carried the same line of thought through them, I have not tried to make them continuous. I have allowed certain repetitions because they cover points which seem to me important to keep in mind and necessary to the completeness of the several discussions.

W. P. P. L.

CAMBRIDGE, November, 1898.

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MEDINET-ABU
Column of Rameses III.

THE LOTUS COLUMN

CONVENTIONAL ornament among the ancient Egyptians, as among all primitive peoples, reflected their habits of life. They were a flower-loving people. Living on a long strip of fertile alluvial land, exhaustively cultivated, and bordered by bare hills or desert sands, they had few trees or even shrubs besides the palms that grew on the edge of the desert. But the river-banks, the pools left by the inundations, and the wet marshes during their season, gave them abundance of wild aquatic plants, and their gardens were full of bloom. They decorated their houses with flowers, covered their altars and filled their tombs with them; the women wore them in their hair. They carved them on the stems and sterns of their boats, on their thrones and harps; they painted them on their ceilings and walls, on their chests and coffins. It brings these remote and grimly imaged people curiously near to real life to be told that in the tomb of a high priest of Ammon, which was opened half a dozen years ago at Deir-el-Bahari, among the withered garlands and

wreaths of flowers beside the dead man lay a bee. It had been tempted in by the freshness of the flowers when they were laid there, and had been intombed with them for five thousand years. Possibly the Egyptians' love of color grew out of their love of flowers; at least the two were in accord. Everything they decorated was alive with color, generally with bright color, and everything they used or made they decorated. They painted their statues, the bas-reliefs that covered the walls of their houses and tombs, and the pylons of their temples. Their ceilings, their cornices and columns, their mummy cases, furniture, and implements, even the sails of their boats, were covered with a mosaic of painted ornament.

The basis of this decoration, so far as it was not pictorial, or hieroglyphic, or purely abstract, that is, so far as it was absolute ornament, was almost entirely floral. The aquatic plants which were native to the Nile gave types that were peculiarly apt for this use. The skill with which the Egyptians used them in borders, surface patterns, and other conventionally applied ornament is conspicuous. They not only conventionalized their elements with marvellous skill in the borders and panels of walls and ceilings, on mummy cases and chests, but they painted or carved them alone and in groups along the bases of walls and round the shafts and capitals of columns. With this simply

ornamental use of floral motives there was also much of symbolism. The favorite lotus, emblem of the resurrection and of the sun, was a religious symbol, consecrated to the sun-god Osiris, and is the most abundant element of their decoration. They decorated their temples with its natural flowers, laid them on their altars and in their graves, and hung them in clusters about the posts of their tabernacles. Its fan-like open blossoms and long olive-shaped buds are seen everywhere in paintings and bas-reliefs. You may find it as an offering in the hands of priests or kings, gathered in heavy bunches, or coiled into the likeness of a trumpet, or piled in heaps among the harvest tribute. The decorative handling to which the Egyptians subject it is singularly firm and monumental, and at the same time singularly free. It appears carved into the high finial that overhangs the steersman of a Nile boat, or twined round the handle of a spoon, or wrapped about the body of a vase and spread open to form its foot. Even the prisoners that kneel at the feet of the great statue of Rameses II. in the Ramesseum are tied together with a rope whose ends are tasselled with flowers.

There are innumerable examples, pictured in papyri and bas-reliefs, of various types of columns. Some are mere compositions of floral and other unarchitectural elements, as unreal as the most

incredible painted architecture of the Pompeian decorators, or the panelling of the Renaissance or the Rococo; others have the air of imitating more or less closely real constructions. They are all much attenuated, as indeed architectural forms ordinarily are, in conventional representations of every style; and they range from the simplest outline to elaborate delineation. It is difficult and dangerous to draw decisive conclusions from pictures which seem to treat their originals with so much freedom. Archæologists have disputed much about their meaning. By far the greater part of the representations show distinctly one order of forms without very essential variations. They consist of a slender shaft crowned with a single lotus or a bunch of them, sometimes the open flower and sometimes the close bud. The more carefully drawn are apt to show a bunch of flowers or buds tied close about the upper end of the shaft by a banded ligature, whose ends are often floating in the air; and smaller buds, set about the base of the larger cluster, are tucked in beneath the ligature, with their stems hanging down below it. We may even see tall flowers reared against the shafts as if they had grown there, and tied to it by other bands. The lotus being their favorite religious emblem, it was natural enough that it should be used about tombs and shrines, and there we find it in abundance, both in

the architecture of the tombs themselves and in pictures of shrines and canopies over the gods. It is all in accordance with what we know of the evolution of architecture among ancient peoples, Egyptians, Assyrians, and Greeks alike, that when they came to develop monumental forms they should fix in solid material the semblance of these decorations.

It is the distinction of the Egyptian capitals among all others that they alone have no practical office, and this accords well with their floral origin. From the Greeks down, every capital has shown, besides the wish to mark the transition between the shaft and the beam or arch, which is the æsthetic office of every capital, a distinct structural effort to strengthen the junction of the shaft and its load. All other capitals expand where they take hold of the lintel or archivolt. They seem to show that the upper end of the shaft was liberally enlarged where it receives the charge, and then what material could be spared at the corners was cut away in ornamental forms to smooth the passage from the round shaft to the angular mass above. This is most manifest in those styles in which the shaft is slenderest in proportion to its load, as in the Saracenic and the late Romanesque, and thirteenth century Gothic. But in the Egyptian, most ponderous of all, the precaution is absolutely neglected, or rather rejected, as if in com-

memoration of the dainty originals of their massive capitals. The architrave is ostentatiously lifted clear from the cap by a square block, which takes the place of the classic abacus. Instead of expanding, the block is made as small as it can reasonably be : in the bell-cap or papyrus capital, and in the other spreading types, it is no wider than the top of the shaft ; in the lotiform it is no larger than is necessary to receive the top of the bud, which may be even smaller than the shaft. So the stern Egyptian builder, who would not admit the arch among the elements of his severely straight-lined monuments, and hid away his vaults in the interior of his pyramids, would have no entangling alliance between decoration and construction, but uncompromisingly insisted on his great capitals as mere ornaments.

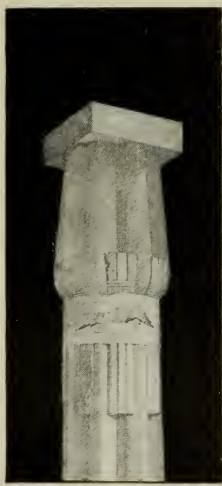
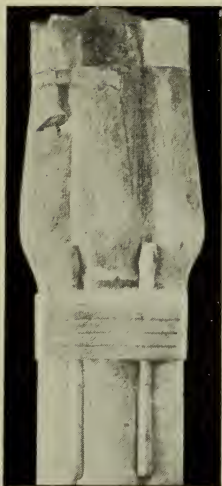
Lately, M. George Foucart, formerly French Curator and Inspector of Excavations and Museums in Egypt, has published a very careful monograph on the lotiform order, using as his *point de repère* M. De Morgan's discovery, in 1894, of the column of Abusir. The mastaba, or monumental tomb in which this column was found, was one at Abusir, near Cairo, hitherto unexplored, which, by its inscriptions, was proved to be that of a certain Phtah Shepses, minister of public works under Sahura, the great king of the fifth dynasty, whose pyramid adjoins the mastaba. Among the reliefs, broken



LOTUS COLUMNS

1. Abusir

2. Bubastis



statues, and other decorations that were found, the most interesting and significant things were the remains of two columns which had carried the roof of the principal chamber, including pieces which, when put together, made a practically complete capital. This capital, which has been carefully restored and set up in the museum at Ghizeh, is of what is called the lotus-bud type, and, fortunately the contour, the delicate carving, and even the color, have been preserved almost unhurt. The importance of the discovery lies in the fact, familiar to all students of architectural history, that before it the oldest known columns in Egypt, and therefore, presumably, the oldest in the world, were those at Beni Hassan, which have been ascribed to the twelfth dynasty. The column of Abusir, taking its place half way back from Beni Hassan toward the beginning of Egyptian architecture, gives a new point of adjustment, and should naturally bring us considerably nearer to the forms we find in the pictured monuments, which we may assume to preserve the original types.

The Abusir column has for its base the flat, bevelled disc which is common to early Egyptian columns, and has even been found at Tiryns, in Greece. The monolithic shaft is straight-lined, slightly tapering, and clustered like a Gothic pier, as if it were made up, that is, of smaller shafts bound together, in this case of six. The capital,

likewise sixfold, is made of partly opened lotus-buds. The stems of the buds continue those of the shaft, showing for a moment above the five-fold cincture which binds the whole together. Between these large buds and round their bases are ranged as many little buds, looking very much like brushes in a house-painter's belt, their hanging stems tucked into the cincture, and fitting neatly in the grooves between the reedings or colonettes of the shaft. The great buds, in spite of their rigorously controlled outline and slight relief, are very delicately carved, and follow close to nature. The end of the stem expanding into the receptacle for the corolla, the parted sepals threaded with fine veins, the two rings of alternating petals, all are there, rendered with delicate relief and exquisite fineness of line, and carefully distinguished in flat colors of Egyptian clearness, not too naturalistic. The smaller buds are treated with the same care. Insignificant as they look, they prove in the historical analysis to be the clew that guides us through the later transformation of the column. The proportions and contours of the column are remarkably fine. The student of Egyptian art knows well the subtlety and beauty of the abstract lines that in the sculptures look queer to ordinary eyes. They are fully borne out here. The outline of this capital is in marked contrast with the straight lines, hooked at the end, which we see in

the later lotus caps. Its beauty and elasticity are not less than those of the echinus of the Greek Doric at its best.

We have here then the oldest known column in the world, and the most beautiful of its own type. There must have been a long period of experiment and progress before work of this quality was evolved, but it is lost to us. In the architecture of Egypt, as in her sculpture and painting, we find the earliest that we can discover is the finest. The period of immaturity still eludes us: as far as purity of type is concerned the ancient empire seems to have surpassed its successors. In magnificence and grandeur the Theban Empire went far beyond it, as Roman architecture went beyond Greek, and the architecture of that empire will remain the standard of what is most impressive in Egyptian building; but as it gained in grandeur it lost in purity.

The next example in chronological order, as was implied above, is the column of Beni Hassan, which M. Foucart, by reason of lately examined inscriptions, dates from the eleventh dynasty, instead of the twelfth as has been the custom. This is already an advance of some half a thousand years from Abusir, during which the seat of empire had been transferred from Memphis to Thebes. The capital has lost a good deal of its naturalism, and a part of its grace. The shaft,

still monolithic, and the capital are fourfold instead of sixfold; the fine shape and delicate carving of the leaves are gone; and they are replaced by a sort of formal plaiting; the little buds have dwindled to twigs or rods. The proportion of the cap is ruder, its outline coarser; the capital has changed from a delicate piece of half realistic sculpture to a conventional architectural member.

Next come certain columns lately found at Bubastis, the best capital of which is now in the Museum of Fine Arts at Boston, and is ascribed to the twelfth dynasty. They are monoliths of red granite, a material which is characteristic of that dynasty. Already there is a considerable and significant change in them from the capitals of Beni Hassan. Shaft and capital are now eightfold, but the lobes of the cap, while they retain in the main their old contour, have lost all the lotus form, and but for the expansion above the cincture, simply continue the lines of the shaft. The colonnettes or reedings of the shaft are no longer simply rounded, but cut to an edge, almost a ridge, so that the section of the whole is like the plan of a flower with eight pointed leaves. The important change, however, is in the little buds set about the base of the capital. These have grown in size and increased to groups of three, but like the others have ceased to be buds. They are compressed into the grooves and flat-

tened to suit the round sectional outline of the column, so that they almost usurp the circumference; and they are bound together in threes by little horizontal bands, which mock the cincture beneath them after a fashion that is common in all the arts of design of echoing in the smaller members something of the character of the larger. The column is stouter than that of Beni Hassan; it is constricted at the butt like a tenpin, in a way that henceforth becomes characteristic.

Here is the lotus-type¹ practically reshaped. It has thrown away the downright imitation of the early form, and with it has lost much of its original grace. At the same time it has departed farther from the straightforward idea of an architectural support, and has taken on an unreal and irrational look which is redeemed only by its massiveness. The shape which it took under Usirtasen and Amenemhat at Bubastis and Hawara it seems to

¹ It is to be noticed that the column which is here called the lotiform, and is commonly so called, has been thought by some scholars to be modelled not on the lotus, but on the papyrus. Without going into controversy it is enough to say here that the balance of proof seems to incline the other way. It was the lotus and not the papyrus that was the sacred emblem; it is clearly this that we see in the sculptures of the temples and tombs, offered to the gods or carried in the hands of kings. It is this that is tied about the columns in the pictured MSS. In the column of Abusir the naturalism of the sculpture distinctly imitates the buds of the lotus, and the conventionalized capital of Beni Hassan shows them almost as clearly.

have kept unchanged for several hundred years. There followed one of the periods of arrest which from time to time interrupted the progress of Egyptian art, and which have tempted writers from Plato down to proclaim its everlasting fixity. The Arab invaders, known as the Hyksos or Shepherd Kings, overran Egypt somewhat as the northern races afterward overran the Roman Empire, and paralyzed art, especially architecture, for centuries. When at last the native rulers, prevailing again, came down from upper Egypt, and once more established themselves at Thebes with the eighteenth dynasty, apparently they took up architecture just where it had been left five hundred years before, under the twelfth. But the great Pharaohs of the eighteenth, nineteenth, and twentieth dynasties were far more powerful and wealthier than those of the earlier dynasties; they built with a magnificence of which their forerunners had not dreamed. They went on building larger and larger temples till their work culminated in the great temple at Karnak, whose famous hypostyle hall surpasses all other architecture in scale.

This great revival of building naturally led to changes of detail, and the column resumed the course of its development. Its changes, as one would expect, were not in an invariable line of progress, as if to a preconceived ideal; yet a general tendency is noticeable, which led to a marked

modification of type. The small buds, as we may still call them, tended to spread till they almost met, and made a crown about the base of the capital. Their hanging stems enveloped the shaft in a sort of sheath, the clustering of the shaft became less marked; the cinctures were in some cases repeated, and the grooves became shallower till the column lost its corrugated look, and first the shaft and then the capital grew round and smooth; and at last the whole column, as we see it at Karnak or Medinet Abu, looks as if it had been turned in a lathe for the convenience of the sculptor who was to inscribe it. In truth, this last purpose seems to have been at the end the determining one, for the Ramessides, who were not only a magnificent race, but an ostentatious one, grew into the habit of inscribing their names, titles, and performances on every smooth surface that they could procure, and perhaps from this, or perhaps from piety, beginning with the lintels and abaci, and gradually appropriating the whole surface of the column, they covered it with their cartouches, their emblems, their deities, and themselves. This is practically the end of the lotus-column. The smooth pillar of Karnak, its outline unmodulated except for the swelling near the top, its surface incrustated or chased, as it were, with a multitude of flat reliefs and picked out from top to bottom with bright colors, is still a stately thing, august even, in its

enormous size and serried order as we see it in the great hypostyle halls; but we should not know it for the offspring of the early lotus column if its pedigree were not so clear that we cannot mistake it.

It was displaced, apparently, from its old pre-eminence. The great central aisle in the hypostyle halls that were now added to the temples, was reserved for the newer bell or papyrus column. The lotus column was remanded to the side aisles, and the tall shafts with bell capitals, towering above them, carried the clerestory that brought a dim light into these tremendous halls. I have called these the newer columns, because none of them have been found which are earlier than what is named the New Empire, beginning with the nineteenth dynasty. This should be said with some reserve nevertheless, for all the temples which are older than this dynasty have disappeared, and we have only what is found in tombs. In these we find all the types except the bell columns—the lotus, the proto-Doric, the palm leaf, and the Hathor column or pier. It is possible that if we found older temples we should find in them the bell column, and M. Foucart reminds us that we may still discover them; but the evidence thus far is that all the others are older.

With these changes of form went necessarily great changes of construction and workmanship,

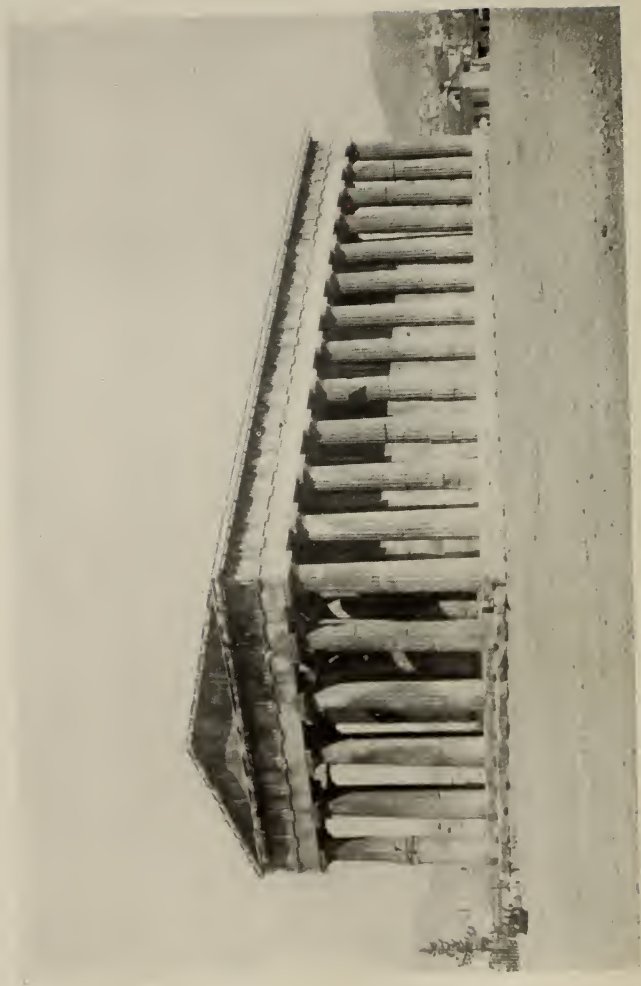
and even of material. The buildings of the early empire had been either quarried from the limestone hills that line the Nile from Cairo to Edfu, or excavated in them. Their columns are monoliths of this stone, which allowed of free and delicate carving, as we see in this new example from Abusir, and in the column of Beni Hassan. The builders of the twelfth dynasty, more ambitious than their predecessors, and authors of almost all the structures of the middle empire which we know, brought the red granite of Syene at the first cataract for their columns. Those of Bubastis and Hawara are examples. They wrought them and their sculptures in the same obdurate material with the decision and cleanness of handling which we all know, although with the sacrifice of some of the delicate detail of the earlier work. Up to this time nothing less than a monolith seems to have been thought worthy to stand as a column; but if the Usirtasens and Amenemhats of the twelfth dynasty could do their modest building in this way, the Ramessides, who bordered the river from the first cataract to the Delta with their huge constructions, could not follow it. Shafts of columns from sixteen to twenty feet high for a few buildings of moderate size could be brought down to the Fayum or the Delta; but when it came to columns forty or fifty feet high, or even sixty and seventy, and in groves, as we see them at Luxor or Karnak,

this method was impracticable. The Pharaohs of the eighteenth, nineteenth, and twentieth dynasties used the sandstone of the quarries above Edfu. Its facility in cutting and handling suited the scale of their buildings and the speed with which they could carry them on. They laid their shafts in drums or slices, or, as the columns grew larger, they built them up in coursed masonry. This they covered with stucco, to dissemble the joints, and give them a fair surface for sculpture and painting. So were built the great pillars of the temples that stand on the plain of Thebes, at Karnak, Medinet Abu, at Kurnah (called by the French Gourneh), at Luxor, and even the earlier work of Seti I. at Abydos. The huge central columns of the hypostyle hall at Karnak, seventy feet high and twelve thick—on the tops of whose bell capitals a hundred men might sit, we are told—are towers, and had to be built as towers are built. It is strange to think of the Jerry-builder in Egypt; but there is nothing new, and some of these wonderful columns are merely shells of roughly coursed masonry filled in with a cheap concrete of stones and lime. We read of some whose filling was found to be a soft mortar that crumbled at the touch into yellow powder. This is explanation enough why we may see these massive monuments, built for eternity in a climate where the great destroyers, frost and rain, cannot reach them, crum-

bling and sagging into decrepitude, even where the hand of man has not been heavy on them. The Ramessides were wonderful builders, with an instinct for grandeur that has not been equalled. They trusted in plaster, and it has at last betrayed them; the wonder is that the gnawing sand of the desert and mere daily changes of temperature have not sooner destroyed it, and that so much of the sculptured record which was committed to it still survives.

The lotus order ended its development on the Theban plain. If not precisely the latest in date, the columns of the hypostyle hall at Karnak show its final outcome, the last term of its logical progress. There remains only a stout well-proportioned spindle, covered by a square block, and supporting a squared architrave. Simplicity of form could hardly go farther, and grandeur of execution has never again gone so far. After the Ramessides the great building days of Egypt were over. There were moments of some activity, as under the Nectanebos, when there was an attempt to copy the old forms. Under the Ptolemies there was a considerable revival; then and under the Roman rule a sort of composite of the early types was evolved, on a smaller scale, which delights the eyes of travellers in the picturesque temples of Edfu, Denderah and Phylæ. But the splendid career of the ancient Egyptians had come to its

end. The rule of their land was gone from their hands forever. The Ramessides, greater than all their predecessors, were the last of their nation. Their architecture, too, had run its career. It had gone through a series of magnificent transformations, had had its full development, and was ready for its decline. To our unprophetic eyes it had finished the cycle of its development, and there was no new progress left for it. In all this there is no sign of that immobility which it has been a fashion to attribute to Egypt and her art. It is the usual human history of progress and arrest, progress again, exaltation, and downfall. It has a strange sound to a modern ear when M. Foucart talks of the "feverish impulse" given to building under Seti and Rameses the Great; but though the pace of the Nile-boat and the chariot is not the pace of the railway and the telegraph, man is always man, energy is energy, and progress is progress. It is not in the nature of man, and never was, to stand still. The Egyptians were entirely human, and immutability is superhuman.



THESEUM—ATHENS
The Greek Order



GRÆCO-ROMAN ARCHITECTURE

GREEK architecture and Roman architecture are commonly spoken of as two distinct styles, yet they are really but stages in the continuous evolution of one architecture under progressive modification, and bear much the same relation to each other in art that Saxon and English bear in language. The Greek is the main stock; the influence of the conquering Romans added new material and developed new shapes without destroying the underlying Greek type; so the conquering Normans imported into the Saxon language their Norman French and Gallicized Latin, which in the end transformed it into English, while the substance of the language, like the mass of the people, kept its national character. Yet, the usual naming of the styles has its convenience, and is too well rooted to be displaced, though it represents the facts better to speak of a single style, the Classic, more significantly the Græco-Roman, of which

the Greek and the Roman are two distinct branches or phases.

Greek building in comparison with other great architectures of the world was small in scale and simple. It was entirely a public architecture ; its domestic building amounted to very little. The towns were small, gathered for security within a circuit of close walls, in tangles of close streets more cramped than the most secluded towns of Italy or Switzerland at this day ; in which small, low houses were huddled together. Even in the larger cities, where the houses gradually overflowed the fortified citadels and accumulated in open suburbs, they crowded together in streets so narrow that in Athens, we are told, in the time of the Pisistratidæ, Hipparchus laid a tax on overhanging stories, and doors that obstructed the way by opening into it. In Rome also, under the Empire, the case was hardly better ; for modern excavations show that on the Palatine itself the streets that isolated the imperial palaces were like the narrowest lanes that we see in the old quarters of Genoa and Venice to-day, and we read that the high houses overhung in story after story, till the uppermost stories joined, and the ways below were left in darkness. The life of the Greeks was in the market-places and public buildings, pre-eminently a town life, for they were, if I may dare say it, a race of martial cockneys, and a mercan-

tile race, in this a good deal unlike the Romans. Their houses were for the most part only places to eat and sleep in, with a little yard or garden where their women took exercise or recreation, when they could afford room for it. It was not till their architecture was fixed and the decline of the ancient cities had begun that Demosthenes found reason to complain that private houses were getting too large and public buildings too small. The primitive Greek life was a life of religion and warfare; religious traditions shaped their architecture by making the temples, which served equally for the service of the gods and the commemoration of victories, as dominant and representative as were the churches in the Middle Ages. About them gradually clustered the few and simple buildings that served the public.

II

All building naturally divides into two classes, the architecture of the beam and that of the arch, which have been called *trabeated* and *arcuated*—according to the means which it uses for covering openings and spaces—the first being that which covers them by beams or lintels, the second that which uses arches. The logical development of the two classes leads in the one to flat ceilings and straight roofs, in the other to vaults and domes.

Classic architecture stands beside Egyptian as the great representative of the trabeated, using the constructive principle of the beam in the Greek unreservedly, under the Romans ostensibly, and deriving its main forms from it. This principle of construction forces on it the predominance of straight lines, especially horizontal lines, and of right angles, which give to all such architecture its most distinctive character, the square and horizontal aspect that marks Greek and Egyptian buildings. When, as in many of those buildings, built for warm or mild climates, the walls are suppressed or subordinated, leaving an architecture of which the roof-lines are predominant, the horizontal lines and the squareness are specially characteristic. In both Greece and Egypt the wall, which elsewhere is the chief part of a building, was apt to be subordinate, and sometimes hardly entered into the effect at all.

The underlying Greek form is the Order; that is, a primary unit of composition, consisting of two parts, the column and the entablature, which are the supporting member and its load. These parts were gradually evolved and shaped by the Greeks into fixed canonical forms, of which there were two, closely related, making the Doric and Ionic orders. The upper part of the Order, the entablature, whether Doric or Ionic, consisted of the architrave, which spanned from column to

column ; the frieze, a band of wall, plain or decorated, borne by the architrave ; and the cornice, an overhanging slab, supported by mouldings or brackets, which crowned the frieze, and usually united it with a roof. The Order, thus constituted, was the direct embodiment, with much elaboration, of the simplest idea of building construction next to a mere walled hut, the idea of a beam or post supporting a roof. It was and remained the essential thing in Greek architecture, and continued through the classical period the typical form for all building that was meant to be monumental.

The archetype of all Greek buildings was the temple ; its underlying form was almost the simplest that could be devised. The saddle roof, set on the stone hut which was the original temple, with gables apparently at first open, and overhanging eaves at the sides, remained to the last. The columns, probably first added at the ends and afterward at the sides, completed the type for all time. The gables were in time made into pediments, that is, were tied across the feet with horizontal cornices ; the number of columns was varied ; their details and those of the entablature were shaped, refined, adjusted, and readjusted to the last perfection of artistic effect ; but the type and the shape did not change during five hundred years while the Greeks went on building

their temples. The oldest temple at Selinus and the Parthenon at Athens were perhaps two hundred and fifty years apart, and the builders of one had probably never seen the other, yet they do not differ so much in their ordinance as the American carpenter's country church differs from the city original which he fancies he is faithfully copying. But having only one form of building, and that a consecrated one, and having but a single type before their eyes, they concentrated their thoughts upon the evolution of their temple, elaborating and refining their one type from generation to generation. They had nothing of the modern desire to exchange an old idea for a new one before it was perfected. The new did not crowd out the old—blessed privilege of primitive peoples, who hold to an idea till they have got all there is in it. To an American who may have seen four or five styles adopted and dismissed in succession, as fashion after fashion has spread over his country, and innumerable forms of buildings devised in each, the fidelity with which the Greeks clung to their type may seem impossible. They sacrificed original invention, consciously or not, which we value above everything else; but in exchange for it they secured perfection, for which we unfortunately do not care. They wrought and rewrought, refined and developed on one line, till by persistence and cumulative study they had brought the em-

bodiment of their idea nearer to absolute perfection than any other people ever reached. Hence comes the striking contrast between the naïve simplicity of the conceptions on which Greek architecture is built and the mature perfection of their carrying out. Their constructive scheme was of the simplest; the ideas that underlie the design of the Doric entablature and the Ionic capital are small even to triviality—puerile we may fairly call them—yet their final expression in the Parthenon and the Eretheum embodies a mastery of architectural effect and a fineness of artistic sense that are the highest example to all ages.

Thus the temple furnished to the Greeks, and consecrated for them, the few elements which sufficed for their architectural needs—the plain pitched roof with pedimental ends, the order, and the colonnade. The scale of their buildings, as I have said, was small; not only their typical form, but their composition, was simple. They did not build for large assemblies or for complicated uses. Their temples held a shrine and a statue, sometimes a treasure-room; the multitude was not received into them, and the public rites were performed outside. Their great gatherings were held out of doors, in the agoras, or in unroofed theatres which, being sunk in the ground and without walls, are hardly to be called buildings. The

shelter which was provided for considerable numbers of persons was in long, narrow aisles, as in the stoæ, which were galleries lined and divided by colonnades, bordering agoras, as in Elis, or connecting other buildings, as on the southern slope of the Acropolis at Athens and at Olympia. The few really large temples, like those of Miletus and Ephesus, were enlarged by doubling the rows of columns without greatly widening the enclosed space of the cella, and these were exceptional. The size of the temple was increased by increasing the scale of the order, whose proportions were the same on a great scale as on a small; the smaller was as the photographic reduction of the larger. The Greeks rarely attempted to roof a space of more than thirty feet. Even the great temple at Agrigentum, colossal and never finished, being divided into aisles, called for no wider span than forty feet. The Order was, indeed, the whole substance of their architecture, enlarged or diminished to the necessary dimensions without thereby changing proportion or detail. The aim of the builders was always monumental, and to their eyes the simplicity of the single order seems to have been essential to monumental effect. They avoided putting one over another, as became common under the Romans, and preserving the grand lines of the single order, they made their buildings, exteriorly at least, in one story, whatever

their scale. The order covered the whole building, with nothing above it but the pediment or the roof, and nothing beneath but a platform, or at most a low stylobate or basement wall. It stood alone in kingly isolation, in long porticos or colonnades, usually without a break, and occupying the whole height of wall. It held a royal dominion and royal inviolability.

A system of architecture so restricted and formal did not provide for many combinations, and necessarily lacked flexibility. Two orders of different scales would not match in any part, and when buildings or parts of buildings were combined it was rather by juxtaposition than by adaptation. The ceilings of the porticos of a Doric temple—of the Parthenon, for instance—will show how, while the adjustment of each part in itself is exquisitely managed, the cella and the two orders of columns (the porticos) are jammed together, as it were, without interadjustment. The contumacy of the orders in combination appears still more strikingly in the Erectheum, where the united structures, though picturesquely proportioned to each other, do not fit together anywhere above the base moulding. Their construction tended, moreover, to restrict the size of Greek building, for their whole proportion being fixed, their height could not be increased without increasing the intervals of the columns. This could not be done beyond

a moderate degree without an enormous cost suited only to an Egyptian Pharaoh or a Roman emperor, and soon reached the limit of impossibility. On the other hand, the very narrowness and uniformity of the means which were employed, the consistency with which they were adhered to, is a controlling element in the singular charm of harmony which belongs to them. Greek architecture is, indeed, the architecture of the beam in its most characteristic form; the Greek Order is its highest phase. The consistent use of the lintel and the banishment of conspicuous curves gave it the preponderance of horizontal lines and right angles which secured simplicity and breadth of effect. These, with the contrast of the upright lines of the columns, which are the most characteristic parts of the order, insure the firmness, repose, and stateliness that distinguish it above all others; the symmetrical arrangement of parts which belonged to it added to its dignity and tranquillity. The exquisite refining of its proportions, in which solidity and vigor were never lost, and the charm of its beautiful detail, were the crowning grace which made it unapproachable.

Trabeated architecture was distinctively the religious architecture of antiquity. The colonnade was the feature that redeemed it from heaviness, and that gave it interest. The column is,

indeed, the natural support of the beam, for it is only a beam set on end. The lintel and the colonnade were the architectural stock of the religious nations, the Egyptians, the Greeks, even the Hebrews, so far as we can judge, where they had an architecture—all but the Chaldeans, who had no stone to build them with. It is not easy to decide, nor need we, which of the two systems, that of the beam or that of the arch, lends itself most to great architectural effects. But for some reason or other a column, if it be large enough, carries a greater impression of stateliness than any other architectural form. This may be due to its uprightness and its isolation, which give it an air of immovable supremacy, like that of a tall man towering above a crowd. At any rate, I suspect that the most majestic architecture that has ever been built, making due allowance for mere scale, has been columnar.

III

The second branch or phase of classic architecture is called Roman, and a great deal has been written about it under that name; yet, as one studies the matter, the question forces itself forward: Was there a Roman architecture? It depends on how we use the word Roman. The architectures of the world have for the most part been

distinguished by ethnical names—Assyrian, Egyptian, Greek, Gothic, Saracenic, Indian, and so on—and I believe that when we speak of Roman architecture we instinctively think of it as the creation of that race of Romans to whom we ascribe the great deeds of early Roman history, of the race which built up Rome. The Roman people, let us remember, was probably mixed from its earliest days, and in later times reinforced by those of innumerable conquered states, so that Paul, a Jew born in Tarsus, could discomfit his captors by declaring himself a Roman, and appealing to Cæsar must be taken to Rome to be tried. But the Romans who made Rome appear like one race compounded of allied clans, of a persistent type such as points to a common origin and a peculiar strongly marked character, by virtue of which they conquered the world, created an empire and ruled it, though themselves but a handful among those whom they took into their people. The question then resolves itself into this : Did the Romans who created the empire create the architecture which we call Roman ? I suspect not.

The real Romans as we see them in history were, it seems to me, singularly like the English of the nineteenth century. Masterful in their ways, confident in their power and natural right to rule the world, they were a vigorous, hard-headed, practical people, with a great gift for administration and

great political sagacity. As they succeeded they grew grasping, as is the natural way of such people, and when they grew rich they grew ostentatious and vain-glorious. By the time they had conquered Greece, they had become sufficiently luxurious to covet art as the *nouveau riche* of to-day covets it; all through the second century before Christ the portable works of art in Greece were gathered into Rome, as Napoleon brought his plunder of pictures and statues from Italy, and apparently from the same motives. They pursued art because it tended to magnificence, and literature because they thought it due to themselves. But they were too practical to become artistic or literary, too gifted for command to do any work but that of governing. For the historian and poet the Roman of position had more regard than for the artist, because he saw in his works his own title to fame. A like feeling perhaps, led him to prefer the sculptor before the architect, for his appetite for busts and portrait-statues was enormous—the sculptor too could immortalize him in a way—and his house had a chamber full of the effigies of his forefathers, to which his own was to be added. But his attitude toward the artist was apparently that of the English nobleman of the last century; he scorned while he patronized. He would give his own energy to ruling others, wisely and uprightly if he were honorable, tyrannically if he were ra-

pacious. The Roman of lower degree would not do the work which his patron despised ; he had as little aptitude for art, and if he could not govern he would live in idleness. So the artists of Rome as well as the artisans seem to have been practically all conquered foreigners, which means slaves, or freedmen, or their children. Virgil's well known lines tell the Roman attitude :

Excudent alii spirantia mollius aera—

Tu regere imperio populos, Romane, memento.

Cicero, attacking Verres for his extortions in Sicily, seems to feel hardly more respect for his connoisseurship than for his moral character, and speaking of a Cupid by Praxiteles, confesses loftily, almost apologetically, that since he has been inquiring into that man's conduct, he has learned the names of the "workmen." And Plutarch who, though a Greek, and living in the age of the Antonines, when the arts were under the special care of the emperors, was a Roman in temper, says : "No generous-minded young man ever wished, at the sight of the statue of Jupiter at Pisa, to be a Phidias."

It need not surprise us, then, that even under the empire, when the wealthy patricians, shut out from active public life, were degenerating into profligate dilettanti, though the work of art was prized

the artist was of little account. Connoisseurship was then, what it has been in all ages, the minister of ostentation, the amusement of idleness; and though the name of the slave or freedman or the conquered subject who had carved a statue or designed a building was preserved as a label, apparently no one concerned himself much about his personality, and no writer recorded more than his name, unless to point some anecdote, as in case of Apollodorus, and that criticism of the amateur architect Hadrian which cost him his life. It had been the conquered Etruscans who in the earlier days of the republic provided the arts for the Romans; they were in its later days replaced by the conquered Greeks. Under the Empire the workshops of Rome were full of imported workmen and artists, of whom most were Greeks, and as Reber says, from Cæsar's time to Hadrian's Greek art seems to have migrated into Italy.

Thus it was in Rome; away from Rome and in their native countries it is likely that artists had more of the consideration which provincials secure most easily at home. Indeed, although Rome was the richest and most splendid city in the world, it is not clear that she was the home of the best architects, or even of the best architecture. It is likely that the innovations and advances which developed fast in the first and second centuries after Christ, were made in the provinces as

well as in Rome itself, perhaps as fast. Certain it is that the remains of building show better art and a finer detail in those cities where Greek workmen were less trammelled by Roman influence than in the metropolis—at Pompeii and Cori in Italy, in many cities of Syria, for instance. In spite of the influence of Roman connoisseurship, art does not seem to have been as metropolitan as it is in our time. Apollodorus, just mentioned, who was Trajan's architect and built his column, his bridge over the Danube, and many buildings, came from Damascus. Trajan himself, in one of his letters to Pliny, concerning public building which Pliny has undertaken to do in his province of Bithynia, tells him not to send to Rome for architects, for the Romans get theirs from Greece. Later, at Constantinople, where there was more centralization even than there had been at Rome, Justinian got the two architects who built Sta. Sofia for him, the one from Miletus, the other from Tralles. Doubtless the men of Rome themselves were responsible in great degree for the rapid transformation of architecture under their empire. They probably influenced it as American men of business in our time influence the new architecture of our cities. They were the clients, exacting and despotic clients, we may be sure; their demand must have called out the supply, and determined its character. But what we call Roman architect-

ure was the architecture of the world at that time, evolved through simultaneous labor all over the civilized world, then under control of the Roman empire, with local differences, but yet with more unity of style than was seen in the world's building at any other epoch—more than in the Gothic, the Renaissance, or the building of to-day. It was stimulated and in a way governed by the Romans, as they governed the world, but its forms and style, so far as we can see, were determined by the same spirit and invention which had formed classic architecture in the beginning and had delivered it to the Romans, the spirit and invention of the Greeks. The Romans had what they wanted. They impressed their character on the architecture, expressed their wants and their tastes in it, gave it sumptuousness, ostentation, scale, complexity, new shapes of building suited to new uses; but the Greeks, it would seem, still found form for it. Nevertheless, we need a name for this architecture. It is the architecture of the Empire and it is convenient still to call it Roman Architecture, but remembering that it is the architecture of the Roman Empire and not of the Roman race.

IV

The Romans had been the natural inheritors of Greek architecture, the architecture of the beam and the order, through the Etruscans, whether by direct descent or by co-heirship; they took it also directly from the Greeks by right of conquest. In their early days they were as conservative as primitive peoples always are, and until prosperity made them worldly they were religious. They were, therefore, faithful to tradition in preserving the ancient form of the temple, with its single order, very much as the Greeks, or the Etruscans, transmitted it to them, and this form had naturally a determining influence on the character of the architecture of the Empire, so far as its monumental intention was concerned. The single order stood to them as to the Greeks for what was most esteemed in architecture, the indispensable form for monumental effect. Yet while they honored the traditional form, they did not shrink from incongruity in applying it. Thus when they needed a larger sanctuary in their temples, they expanded the cella till it took in the whole width of the platform; but the lateral colonnades were kept imbedded, as it were, in the side walls and were useless. The column, thus engaged, as the term is (for which indeed Greek architecture had furnished a prece-

dent), and still bearing witness to its inalienable right, was an important member of the style of the Empire, most distinctive in its combination with the arch in secular building.

For along with the order the architecture of Rome had inherited from the Etruscans the arch, despised and rejected by the Greeks, but honored and monumentally used by these. It was probably the child of the bricklayer, who has no other means of bridging an opening; at least we find it first in alluvial Mesopotamia, where the Chaldees, who had no stone to build with, raised their great pyramids and built their palaces of bricks, and where the Assyrian conquerors who appropriated their civilization and art, as the Romans did the Greek, adopted it from them, and used it on a great scale. Born in the oriental brick-fields, it came to the Greeks with all the associations of ignoble material, profane uses, and hated sponsors. Every influence of religious association, conservatism, and respect for the Egyptian example, from which they had learned much, bound them to their trabeated style. Still more, the instinct for harmony of form which dominated both Egyptians and Greeks could but warn them that the use of the arch not only implied a change of their constructive system, but was at war with their whole architectural scheme of lines, proportions, and monumental effect. Even as late as the time of Hadrian, after long subjection

of Greece to Roman control, the arcaded conduit to the Tower of the Winds at Athens seems to show the persistent resistance of Greek workmen on their own soil to the very principle of the arch, for the arches are cut through solid slabs of stone instead of being built up in the fashion of the true arch.

Over the Romans such traditions and feelings had no influence. As we have seen, the Etruscans had used both order and arch, keeping the one as pure in their temples as the Greeks did, and employing the other in their tombs and in their civic building. They were not brick-builders, and while, as Vitruvius tells, they retained the primal construction of the orders in wooden beams, they built their arches in stone. The gateways of Volterra and Perugia still show us how monumentally they used them. The early Romans, building their city in an alluvial region, and being for some generations little more than a community of needy outlaws, were naturally in the habit of building in brick rather than stone. The often-quoted boast of Augustus that he found the city of brick and left it of marble, "*Marmoream se relinquere quam latericiam*"¹ *recepisset*," as Suetonius repeats it, in-

¹The use of the word *latericiam* implies sun-baked bricks, and we find that Vitruvius gives careful directions for their manufacture. The kiln-burned brickwork of the Empire was famous, of great variety and excellence of workmanship, and provided an admirable school for the study of arches and vault-

dicates that to the end of the republic brick must have been the chief building material.

That the Romans, then, whose city had grown up under the shelter of the arch, should insist on its being incorporated into their perfected architecture was inevitable. As they grew powerful and extended their rule, their civic functions and their life became complicated, their architectural needs increased, they grew sumptuous and ostentatious. Even before their imperial days they were grown too progressive and too full of new wants to be restricted in their use of architectural forms by old religious associations or by any of the feelings which we call sentimental. Indeed, in their worldly greatness they appear to have worn lightly even the restraints of piety, in our sense of the word, and their reverence seems to have been but shallow. They did not concentrate their aspiration and effort on their temples as the Egyptians and Greeks had done. They did not build them on the same imposing scale. The temples were many, and sometimes large, but were

ing, in which the Roman builders attained great skill. It is not to be understood that there was no building in stone and marble under the republic. Though little remains of pre-Augustan architecture, we know that the temples were not built of brick—their orders indeed could not be. But even Tarquin's Cloaca Maxima is arched in travertine, and we are told that Metellus built the first marble temple as early as 140 B.C. The boast of Augustus was only rhetorically true.

unimportant beside their civic buildings. Many of them they dedicated to their own fellows, for they did not hesitate to thrust their dead emperors, the good and the bad alike, into the company of the gods, to which, far from unexceptionable as it was, most of these did but scanty credit. They were not to be constrained, therefore, like the Greeks, by either traditional reverence or artistic instinct, to keep their Order pure. They had received it as the embodiment of all that was finest in architecture. It was too much honored not to have the first place; yet the arch was their own, and was too serviceable to be set aside. They set their architects to combine the two. When and how the combination was first evolved is an obscure question, for the pre-Augustan architecture of Rome is almost gone. We do not doubt, however, that the Romans themselves compelled it, and that it was first done in Rome. It at least shows itself completely accomplished in the form to which we are used in the remains of the Tabularium, which was built at the base of the Capitoline Hill in 78 B.C.

The arch was the great constructive factor in the architecture of the Empire; it added enormously to the builder's resources in planning, and to his means of architectural effect. It gave him the means of spanning wide openings, and when expanded into the vault, of covering great spaces;

it habituated him to curved lines and surfaces. Helped by it, and spurred by the new wants of the complex Roman civilization, he enlarged the scale of his buildings and greatly increased the intricacy of their plans. He used his new combinations with a boldness and fertility of invention that have been the wonder of the world from his age to ours, constructing on a scale that dwarfed everything that had gone before except the colossal buildings of Egypt. Under a new stimulus, and with new means of effect, Roman building greatly outstripped that of the Greeks in extent, in variety, and magnificence. The cities grew into great accumulations of various buildings. The temples no longer dominated each important town, as in Greece in earlier days, conspicuous in the landscape and in the city's fame, like the cathedrals in mediæval towns. The civic buildings, and even private, far outshone them. Streets lined with porticos, arcades above arcades, rank over rank of columns, houses in so many stories that in Rome their height had to be restricted by law, took the place of the low-built and unpretending towns of the early Greeks. Instead of the trim little marketplace, or the old cross-roads with their careless cluster of simple and refined shrines, stoæ and town-hall, were dense and richly adorned forums. The theatres and amphitheatres, no longer sunk in the ground, towered above the lesser buildings with

arcades and vaults in many stories. In palaces and thermæ one stately court followed another, halls of every size opened together, vaulted or domed, round, square, or cruciform, with niches, exedras, porticos, splendid with bronze, gold, and rare marbles, pictured walls and painted ceilings, peopled with statues—all in marvellous contrast to the simple dwellings of the early days of Greece and Rome. The country seat of Diocletian contains most of the present town of Spalato; the villa of Hadrian and the golden house of Nero were probably larger. This architectural splendor was not confined to the metropolis or to Italy, but covered the civilized world from Gaul, and even from Britain, to Syria and the East, as city after city passed under the dominion of Rome and grew rich under her administration and commerce. The heart of Rome herself was occupied, not by streets, but by a connected series of great forums, or squares if we may call them so, laid out in emulation by one emperor after another. The wayfarer in the time of the Antonines, coming up from the Arch of Titus and along the Via Sacra between the swarming Forum Romanum and the Basilica Julia, would find before him the long way winding up the Capitol Hill among the temples of Saturn, of Vespasian, and of Concord, behind which rose the arcades of the Tabularium and over them the Capitol, and still above it the lofty temple of Jupiter Cap-

itolinus—a mighty pile of buildings. Then if he turned off to the right, passing by the golden milestone of Augustus and the venerable Rostra, he could go from forum to forum, from court to court, as in a palace of giants, from the colonnaded Forum of Cæsar surrounding the temple of Venus Genetrix, through the galleries of the Forum of Nerva into that of Vespasian, which encircled with its porticos the great temple of Peace, enriched with the spoils of the temple at Jerusalem. Then crossing again the Forum of Nerva with the temple of Minerva displayed at its northerly end, he would come to the Forum of Augustus and pass the famous temple of Mars Ultor, where the square widened out between great sweeping galleries. Then he would enter the Forum of Trajan, the design of the unhappy Apollodorus, after a half-mile of walking through sumptuous squares and pillared corridors, and see before him the great enclosure flanked by deep exedræ behind its porticos, closed on the farther side by the enormous double-colonnaded Ulpian basilica, behind which soared the column of Trajan as it still soars to-day, and still farther on the great peripteral temple of Trajan, with its enclosing peribolus. On every side his eye would meet splendid monuments, forests of columns, crowds of statues, roofs above roofs shining with gilded tiles, and fringed with more statues, pediments crowded with sculpture. There

is nothing in the world now to give a picture of such an accumulation of architectural magnificence. It was the culmination of a splendid stateliness. Perhaps nothing in our day has come so near suggesting it, in its stateliness though not in its splendor, as that great gathering of transitory buildings, enormous in scale and magnificently disposed, with which Americans celebrated their four hundredth anniversary at Chicago in 1892. This wonderful cumulative effect of architecture was a thing which the Egyptians never reached, although something like it was secured by simpler means in the great Egyptian temples. The Greek habit of grouping their important buildings together tended toward it; and must have given all the architectural effect of which their comparatively small towns were capable. The Acropolis at Athens with its group of temples, its monuments, dominated by the great Athena Promachos and its imposing Propylæa, gave a hint of it on a small scale; but the habits of the Greeks, their wants and their means, did not lead to it, and their simple architecture of temples and stoæ, with their two orders, though they bent it to a considerable variety of forms, would have been greatly strained to provide such effects on the scale to which the Romans grew accustomed.

V

Much contumely has been poured upon the Romans for neglecting to design a special style to suit the arch, which was their peculiar form. But, letting alone the question I have already suggested, whether the Romans, as distinguished from the Greeks, did design architecture at all, it is difficult to see what should have led the men of the Empire to do this. No race and no nation which had already a finished style of its own has ever deliberately set it aside to make another to suit a new form. Their problem was, and they could hardly escape it, to combine the arch and the order. It was a thankless problem, for the two forms involved hostile principles of construction, and the union, it must be said, was artistically imperfect; but it was not in their nature to reason this out. For them the union was inevitable, and their success was much greater than the last generations of English and American critics have been willing to allow.

If we consider the problem as it faced the Romans, and examine the solution without prepossession, we shall be more inclined, I think, to admire their skill than to deplore, as has been the fashion, their dulness. The problem was probably solved by Greek brains—just as the solution was

doubtless worked out by Greek hands, and with the prepossession of race in favor of the orders. The Order, as we have seen, was a structure of beams, horizontal and upright, executed in stone instead of wood, practically suppressing the wall, which is commonly the substance of a stone building; its natural embodiment was the colonnade. The arch was simply a hole in the wall, its security depending on its having the mass and weight of the wall to hold it together. Arcuated architecture is then the architecture of surface and mass, as trabeated architecture is that of lines and angles. The Roman method of combining the two was to build the wall, pierced by its series of arches, and to set the order against it, showing always an arch between two columns, which carried the entablature above it. The columns were lifted on pedestals by which their height and the scale of the order were lessened, but the stride of the colonnade was rather unbecomingly increased. To ally the order with the arch a sort of capital, the impost moulding, was put about the pier to receive the arch, the parts were bound together at the foot by carrying the base-mouldings of the pedestal round the pier, the archivolt or band about the arch echoed the architrave of the order, and finally a keystone, set into the crown of the arch, was carried up till it bore against the architrave. This keystone, which is perhaps the

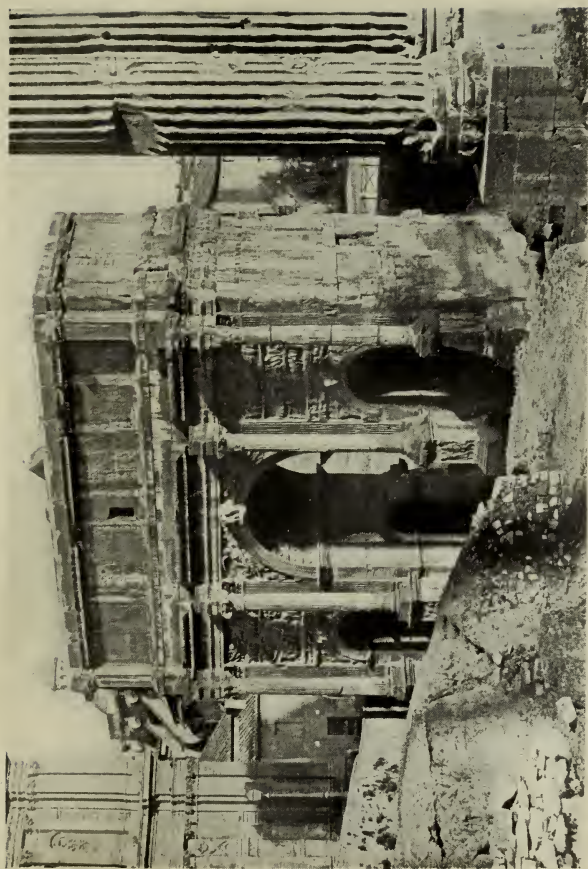
best detail contributed by the Roman builders, and is of great æsthetic importance in binding the arch and the order together at the most critical point, has been as much abused, to the disfigurement of arches, as any other feature in architecture. The Romans, with a just sense of its office, rejected it from detached arches and confined it to its first purpose ; it was reserved for modern architects to thrust it on the arch for an inevitable companion, like the old man of the sea on the shoulders of Sindbad ; and though it has no structural value whatever beyond any other stone in the arch, the keystone has been accepted by the world as a structural type, and all the honor due to the arch has been heaped upon it in language and literature.

In this transformation the architects of the Empire held unquestioningly to the traditional idea of the supremacy of the Order, to which the Greek workman was held by his tradition as the essential in all architecture. The Order had a patent of nobility ; the right thing was to give it unquestioned precedence, and to remand the serviceable arch to service under it. For the exigencies of the Roman world the simple one-story architecture of the Greeks, with a single order constituting the whole façade, was altogether insufficient, the range of forms which the Greeks provided them was also insufficient. The modern degradation of the or-

ders by which two or three stories are crowded under one of them, was not thought of till the Renaissance architects contrived it in their one-sided zeal to combine the spirit of classic architecture with their necessities. So the Romans piled order on order and arcade over arcade as they set one story after another to their buildings. To the two orders of the early Greeks they added three new ones. We see four stories of columns and pilasters on the Colosseum; there were seven, we are told, on the Septizonium of Septimius Severus. They provided a store of new details, pedestals, niches, pilasters, pedimental window-caps, keystones, brackets and the like. They devised numberless forms and combinations of halls, courts, porticos, to increase the extent and magnificence of their palaces and baths, and covered them with domes and vaults in a great variety of forms. The ornament of Greek buildings had been rich and abundant, but delicate and restrained; the sumptuous taste of the Romans called for a surfeit of decoration, but was not fastidious. Whole orders were incrustated with unremitting sculpture, like a Chinese ivory, as appears in the remains of what has been commonly called the Temple of Jupiter Stator. Floors, walls, ceilings were covered with lavish decoration in marbles, stucco, mosaic, painting, gold and bronze, sometimes delicate, and sometimes coarse, but everywhere exuberant.

ARCH OF SEPTIMIUS SEVERUS—ROME
The Roman Order





The arch was too important to be left in the utter subserviency to which it was first subjected. It had, so to speak, much of the character of the Romans themselves: it was by nature ambitious and domineering. It is not easy to put the arch and the order together without attracting the eye more to the arch than to the other. The order and the column are in the nature of things limited in scale; the arch may be built to any scale. The Romans evidently liked it for its dignity as much as for its convenience. Their monumental use of it appears in the triumphal arches that were strewn over Italy, over Europe we may say, by the conquerors from Augustus to Constantine, in the great hall of the basilica of Maxentius or Constantine, and in that of the baths of Diocletian, which Michel Angelo turned into the church of *Sta. Maria degli Angeli* at Rome. It tended to overbear the order which was set over it, and in the shape of the vault and dome it was set above the order, as we see in these halls. The element in Greek architecture which was suited for combination with the arch was the column, and its reasonable place was under the arch, but it had been from the beginning married to the entablature, and builders were slow to conceive the idea of divorcing it. Moreover, the natural consort of the arch was the pier. An arch, as we have noticed, was but a hole in a wall, and when two arches were brought to-

gether they had between them a pier. The bearing of the arches on the pier was direct and natural; to replace this pier by a column and readjust the bearings was a matter of contrivance and difficulty; nor can a range of arches stand without a pier at each end. And yet the column could not in the long run be spared. The mediæval Italians, fully in love with it, used it often to the complete neglect of the pier, and held the arch together without abutment by tying it with iron; but the tie was an obvious makeshift, and other nations have not imitated them. The appropriation of the column by the arch, however, involved the complete disruption of the Order, and that was too sacred to be tampered with; its alliance with the arch lasted through the classical period.

At the end of the classical period the vault, which later was the occasion of the development of mediæval architecture, gave an indication of the way in which the connection of the arch and the column was to be reached. The arch of a vault could not, like an arch in a wall, be set between columns; the columns must stand below. The lunettes of the groined vaulting of a lofty clerestory, like that of the baths of Diocletian, left between them a thin pendant which must either die away obscurely in the wall or show in a projection that called architecturally for some special support. This was exactly the place for a single

column. The Romans were used to columns standing apart—on the fronts of their triumphal arches, for instance—but in every case a bit of the inseparable entablature was set above it, and supported a statue or something else. An order was an order, and could not be broken. Column and entablature were as inseparable as the Dioscuri. At least this was the case in Rome, where, under the Empire, the canons of art were most strictly followed, where everything was more normal and more formal than elsewhere, and where, it would seem, except when an emperor, like Trajan or Marcus Aurelius, set up a colossal column by itself for a monument, the column was never seen without the entablature. It was reserved for the provinces, which, under the later emperors, were the home of all the progressive spirit of the time, to find the new path for architecture. The late Mr. E. A. Freeman, in a notable essay some thirty years ago, called attention to arcades in the palace built for Diocletian after his abdication at what is now the town of Spalato, in which are the earliest examples we know of arches set directly upon the capitals of columns, the entablature being entirely left out. Whether this change, which meant a revolution in architecture, was seen here for the first time, we do not know; we cannot doubt that it was an Eastern innovation, and may believe that it was Greek. The Eternal City held her

orders inviolate as long as she kept her empire and her religion. Her empire passed with the barbarian Constantine to Constantinople, which, with a population of Greeks and barbarians, became under the first Eastern emperors the focus of all the progress of the world. The conservative influence of Rome gone, classic architecture perished. The column kept its new place under the arch; the entablature dwindled to a band of mouldings or to a mere stilt, and presently disappeared. The union of the column and the arch has never been set aside. Its survival alongside of the resuscitated Order, when classic architecture was renewed in the Renaissance, was the most important difference between the new classic and the old. Its history in the intervening period belongs to Byzantine and Romanesque architecture.

VI

The Romans applied the system of what we now call *la grande culture* to architecture. Methods of building, types of design, orders, arches, proportions, ornaments, they reduced all to a manufacturing system. They were essentially engineers and builders rather than architects. They dealt in masses of masonry, walls, and piers on an enormous scale. Being masterful and not artistic,

with a genius for administration, they might naturally fancy that architecture could be handled, like building, by reducing it to a machine-made product, to be turned out in quantity for every emergency. There are indications that their great buildings were in charge of engineers rather than of artists; the character of the architecture seems to imply that it was their care to contrive such a system of design that when the scheme of a great building had been devised by an engineer or chief constructor, designers could fit the conventional architectural forms to it by rule and formula. In this way we have seen many public buildings carried through in our time under the control of engineers with the aid of expert draughtsmen. The method is favorable to efficiency and rapidity. The construction of Roman buildings was of a kind to be carried out under a similar system by an army of ordinary workmen, with great speed and on an extraordinary scale. This was only possible with an architecture which had been disciplined into a rigid system of proportion and decoration, where every form and every detail was definitely prescribed, and small details were repeated in absolute uniformity by the hundred or by the rod. If we may reason from Vitruvius, this was the rule under which the imperial architecture was brought. No architecture could have submitted to it so readily as that of the orders; none could have fur-

nished so good a basis for it as that of the Greeks, in which the conditions of harmony, effectiveness, beauty of form, and a fair adaptability were already provided. Under such conditions, with increasing wealth and increasing population, in the pressure of new wants and an enormous demand for new buildings, it was natural that skill in construction should grow and that art should fail. They had taken the efficient way, but they lacked the true instinct; they were wise enough to join the architect to the engineer, yet apparently not wise enough to let him work in his own way.

The Greeks, to be sure, had been in their kind as good constructors as the Romans, and far better, so far as mechanical execution goes. The Romans carried nicety of construction as far as their practical needs called for it; the Greeks as far as they could. It was enough for the Roman if his construction was sound, and if it could be conveniently and rapidly put up. He wanted things to move, and would not waste his time. He built so massively that he could build fast, even hastily, and mainly by unskilled workmen. His buildings were piles of rough bricks and concrete; he overlaid them with an architectural envelope, stately, elaborate, and finely enough wrought to satisfy the not very exacting taste of his time. The Greek never could do his work finely enough, mechanically as well as artistically. His monumental

instinct pursued him everywhere. Plutarch, speaking of the wonderful work of building in Athens under Pericles, says that the greatest wonder of all was the speed with which it was done. Yet the drums of the great columns of the Parthenon, six feet in diameter, are so closely set, without mortar, that a sheet of paper could not be worked into the joints, and the whole structure is laid with the same precision. The Greek, under guidance of his monumental instinct, went on to the end of his independent career, steadily refining the quality of his work. The Roman work, on the other hand, deteriorated in execution and in artistic quality from its first great outburst under the early emperors, while it gained in greatness and richness of conception; that is, it came more and more completely under Roman influence, so that the last great monuments of the Empire, the baths of Caracalla and Diocletian and the basilica of Constantine, while they were its most splendid monuments, were its most inferior in execution. The triumphal arch of Septimius Severus is a much ruder work than that of Titus, and when Constantine would glorify himself by one of his own, more magnificent than its predecessors, he had to pillage that of Trajan to find decoration for it.

It has been a recent habit to vilipend the Romans for the falsity of their construction—building on arches and making a pretence of lintels,

using concrete within and travertine or marble without—and to praise the Greeks for the truthfulness of theirs. But the modern doctrine of sincerity in building, of the faithful correspondence of decoration and appearance to the reality of construction, finds little comfort in either. In truth the doctrine as such is apparently altogether a thing of the literature of this century. The work of the best mediæval period seems to have been, for reasons which we cannot discuss here, in consonance with it; but it is doubtful whether artists, left to themselves, would ever have discovered it. Evidently neither Greek nor Roman concerned himself with it. To the Romans construction was confessedly one thing and architecture another; with the Greeks, though appearances are in their favor, it was not so very different. It is true that their traditional system of construction was at the bottom of their whole decorative scheme. Yet if we examine the Parthenon minutely, we shall find that the delicately fitted joints in the columns are only wrought in a ring a few inches wide at the circumference, where the drums have been ground together like the neck of a bottle and its glass stopper, and that all the inner surface is cut away roughly so as to escape contact and leave the greater part of the joint open and hollow. So the great mass of the marble contributes less to the support of the heavy superstructure

than the concrete filling of Roman walls, or the rubbishy cores of the great columns of Rameses at Karnak. Worse than this, the magnificent spreading capitals of the Parthenon, that with their solid abacus and springing echinus assume to carry lightly the weight of the great entablature, gathering it in securely to the shaft, really do no work at all. Lest the finely wrought edges of the abacus should be damaged by any unequal pressure from the architrave, the weight of the entablature is taken by a shoulder or bench a fraction of an inch high, the *scamillus* of Vitruvius, which receives the architrave and carefully holds it up out of reach of the capital. This *scamillus*, a miniature of the die set visibly above the Egyptian capital, is so low that it could not be seen or suspected without a close examination made high up at the level of the abacus itself. The Greeks were before all things artists, and they would not detach artistic beauty from perfection of execution, differing in this from those artists of our day who pour contempt on mechanical perfection. But like all artists in whom the artistic sense is entirely dominant, they did not look below the surface. In architecture, which is pre-eminently the art of form, they did not trouble themselves about reality in what has been called functional expression; it was enough for them to maintain carefully the appearance of it. That the builders of the Roman

Empire should infuse into their art ethical principles for which the life of their day had no counterpart, or should inherit what had not gone before, was hardly to be expected.

The treatment which the orders themselves received at the hands of the Empire, apart from their combination with the arch, has brought reproach upon the Romans, not without cause. While building went on increasing in scale and mass, the builders kept lightening the orders, so that these, instead of gaining a corresponding robustness, lost the vigor which they had in the hands of the Greeks of the golden time. The Doric suffered most. They thinned its architrave, on whose massiveness the grandeur of the Greek Doric greatly depends, and also the cornice; they widened the frieze and narrowed the triglyphs; they elongated the columns and gave them bases. These changes, it must be said, were in line with those that showed themselves in Greek architecture after it had passed its prime. They would seem to be at least in the direction of delicacy, but they were neutralized by the want of artistic feeling with which they were made. The Ionic capital was squeezed and flattened out of all its grace. In Rome especially the details of the orders were vulgarized; their ornaments were degraded, their mouldings were reshaped, and lines of the rule and compass, which might be traced by an ordinary workman,

were substituted for the delicate hand-drawn profiling of the Greeks. So the one charm which the Romans might have saved if they could have recognized it, in which there was no hostility to the practical requirements to which their architecture was bent, was cast aside as if their eyes were closed to it.

It is easy to forget the debt which the architecture of the world owes the Roman Empire. The arch and its congener the vault gave to the art of building a flexibility and power that enormously increased its capabilities. They could carry walls of any height and span openings and spaces of almost any width. They could adapt themselves to curved walls and rounded plans, at which the lintel visibly relucts, though we have seen it constrained to them. The curved wall itself, once introduced into building with the arch, added immense variety to the resources of both plan and elevation; the vault and dome gave forms of dignity and grace which in due time revolutionized the art of building. The multiplied arch opened later a new kingdom of richness and picturesqueness. The buildings of the Empire show a command of resources, a power of adaptation that astonish us; no other architecture compares with them in those qualities of design till we come to the Renaissance. Though we conclude that the carrying out of these works was in the hands of Greek work-

men, yet it would seem that the spirit which impelled the transformation must have been that of the Roman masters. The architecture of the Empire went as far beyond the Greek in its power of conception, as it fell below in artistic quality of execution. Did the Greek race, under the masterful stimulus of Roman influence and of the practical requirements of their time, furnish the conceptions as well as the execution? At any rate, let us give the imperial architecture the credit that is due it, of being greater in ideas, more abundant in resources, fuller in invention, than any that had been known in the world before.





SANTA COSTANZA—ROME
Time of Constantine

THE AGE OF CONSTANTINE

I

IF we look back in the history of Rome to the accession of Constantine, at the beginning of the fourth century, we shall remember that, though her prestige remained, influence and energy were long gone out of her. The seat of influence was the seat of military power, that is, the army; and the army was kept busy on the frontiers, where the barbarians were always harrying the empire, and especially in the East. The army had for a long time made the emperors; some of the most noted of them were provincials, of barbarian stock. Septimius Severus was an African, Diocletian an Illyrian; Constantine, born in Moesia in Asia Minor, was made emperor at York. Rome had little to do with the empire except to live on it, and be its figure-head. The active emperors spent their time away from her, and some of them never saw her during their reigns; she lived in indolent tranquillity, undisturbed except for occasional riots. Her population consisted of the old

patrician families, who lived on their incomes, supported their troops of dependents, and gave the tone to the city; the tradesmen and work-people, mostly slaves and freedmen; and the idle populace, who held themselves superior to the tradesmen and work-people, and lived on the largess of the empire. She had no stirring middle class; commerce was nothing to her. The city was finished, overbuilt indeed; her art and literature, imported from Greece, were decadent, and given over to the lifeless imitation of old models. The Senate still sat and legislated perfunctorily; its only duty was to pass the edicts of the emperors. Rome was the stagnant home of old traditions, old customs, old ideas, and old superstitions. She was full of an overweening veneration for the traditions and memories of her old greatness, and closed to the ideas of progress with which the world outside was already fermenting. There was a considerable body of Christians among her people, chiefly among the slaves and freedmen, it would seem; some of them were prosperous and even wealthy, and beginning, in the cessation of persecution, to let their worship appear, and to build churches for it above ground, but outside the walls. As yet few persons of influence were among them, and they were looked down upon by both the patricians and the idle populace.

Rome was pagan, and pagan she remained, even after Constantine, in her ruling spirit. The patri-cians were slow to accept the Christian religion, and clung to their old worship, at first publicly, afterward secretly, long after the official religion was established. Julian the Apostate, half a century after Constantine's conversion, only gave public expression to this smouldering paganism when he tried conscientiously to bring back the empire to the worship of its old gods. This was a part of the ineradicable conservatism of Rome, a conservatism which fairly matches that of her later years. Even among the lower classes, who formed the body of the faithful, the superstitions of the old worship lingered almost unimpaired for many generations; the worship of saints took the place of the cult of nymphs and fauns; the Christian festivals were set designedly on the days of heathen feasts, and it is curious to note how many popular superstitions which have survived in Italy to this day, and from her spread through Christendom, are clear survivals of the superstitions of pagan mythology, such as the evil eye, the sinister meaning of omens seen on the left, and a hundred common signs of good luck or ill.

As she was pagan, so she was classic. Her art was interwoven with her religion, interpenetrated by it, shaped by it and by the traditions which came down with it from her early history. That

her conservatism should show itself especially in art was inevitable. For the gospel which was to work a radical change in the moral and social order of the world had no direct message whatever for art. The Church took her art where and as she found it. The only change she made in it was by the introduction of new symbolism, and even her characteristic symbols were in great part the symbols of the old worship invested with a new meaning, which may or may not have been discriminated by the multitude of believers. Thus the emblem of Bacchus became one of the cherished emblems of Christ, and the amoretti which sported among the vines on the walls and vaults of the imperial palaces continued their gambols unrebuked in the name of cherubs on the vaults of Sta. Costanza and on the Christian sarcophagi of the fourth and fifth centuries.

This obstinate conservatism of classic art has not, I think, been sufficiently recognized. So long as the art of Italy lasted it was classic. It is common to assume that the new religion brought a new impulse to art, and began at once to develop a new system of forms which grew continuously into the art of the Middle Ages. But the new art did not germinate in the West till the old had expired; and before this the greater part of Italy had been reduced by violence, disorder, impoverishment, pestilence, famine, and depopulation, to

a condition in which art was the last thing to which her wretched inhabitants had attention to give. It was the destroyer himself who lifted her out of this condition, and when she rose again it was not only to a new social order and a new art, but practically with a new population. It was not to the new religion, but to the new blood that art owed its regeneration.

It was in the East that the barbarians began to overrun the empire. There they did not annihilate the social and political order as in Italy, but rather were absorbed and assimilated by it, till in the end they may be said to have absorbed it. This process was going on before Christianity became the religion of the empire. As order and government did not perish in the East, but were gradually transmuted into new forms which suited a new people, so it was with art; and the art shaped by this process of transmutation retained in the end much more of classic character than in the new German kingdoms of Italy, where, when it grew again, it grew *de novo*.

To the East, then, we naturally look for the connecting links that join classic art to Christian; but there these links are peculiarly difficult to trace, for they have been nearly obliterated by the later invasion of later races, bringing a new and militant religion—races which have not assimilated with the conquered people, and whose blood

has rather curdled than clarified that of the countries which the Turk has overrun. But the great palace that Diocletian built at Spalato, the later churches at Constantinople, culminating in Sta. Sofia, the buildings of Theodoric and his successors at Ravenna, purely Byzantine in style, and scattered survivals here and there, especially the singularly preserved series of stone buildings of Syria, give, when comparatively studied, a very convincing picture of the progressive changes of architecture in the East. It has been a habit to look on the East, including Greece after the loss of her independence, as the home of conservatism, given over to intellectual coma, and lost to progress. But though the later empire of the East stiffened into immobility and routine, and though after the Roman conquest Greece declined into artistic stagnation as well as political, yet in the brilliant days of the Roman dominion, through the reigns of the Antonines and down to the time of Justinian and later, the Eastern provinces were the focus of the energy and progress of the world. While Rome lived in idle indulgence on tributary wealth, the busy cities of the East created that wealth. The ruins of Asia and Syria show their astonishing prosperity and prove their continual progress. The exceeding refinement of form and fastidious adjustment of detail that belonged to the Greeks had been gradually lost, as was natural

when the consecrated classic forms, refined by two or three centuries of consecutive study, came to be modified or supplanted; yet, if we may trust De Vogüé's plates, the detail of architectural work done in Syria from the second or third century to the seventh was as clear-cut and well-adjusted as any except that of the very best times, and far finer than contemporary work in Italy. It is not fair, I think, to speak of the first Christian centuries as a period of general decadence in architecture. In some respects a great change had come over architecture and the spirit in which it was designed. Though the exquisite sense of the Greek architects for proportion and for refinement in detail had decayed under the Romans, the period of Roman formalism was passed and a decorative spirit had come in which, if it lacked the perfect grace of the old Greek and was over-exuberant, as some of us would say, was yet full of freshness, vigor, and invention. It could not easily outdo, I suspect, the richness of pure Greek art, which was more sumptuous than we are apt to imagine; but it substituted an opulence of superb material, a wayward freedom and exuberance of form, and, especially with the development of mosaic, a profusion of colored surface decoration that outshone the splendor of the earlier time. The technique of architecture, apart from the finish of its workmanship, had in some ways greatly

advanced under the Romans, and continued to advance. The squared masonry and simple lintel construction of the Greeks, unequalled in its kind, had been replaced by a complex system of arches, vaults, and domes, with a carefully lavish use of rough material, cased in wrought stone or marble, carried to a gigantic scale, with unexampled grandeur of effect, and building structures of a complexity, size, and audacious conception which even the nineteenth century shrinks from attempting. The technical advance by no means stopped as the splendor of the empire decayed after the period of the Antonines. The steps of the succeeding development are not clearly traced, owing to the disappearance of the buildings which should have shown them, but the monuments of Constantine and the more fully developed architecture of Justinian show a transformation that could not have come of a sudden change—a thing which never happened in architecture till in modern days fashion got its hands upon it—but indicate clearly a continuous modification, some phases of which, at least, are still to be seen in the architecture of Central Syria and in scattered monuments that survive elsewhere.

So, while Rome was decadent, and art was decadent in her, architecture at least was not only alive but in some ways advancing in the East. Constantine's great predecessor, Diocletian, when

he withdrew from empire retired—if it was retirement to move nearer than his capital to the centre of all activity—to his native Illyrium, and there built the great palace which is our record of the progress of architecture up to his day. I say up to his day, for the changes shown in it can hardly be the sudden efflorescence of that one building, but must be in the main examples of what was going on in the current of contemporary progress.

The palace, surviving in isolation, cannot have been the only practising ground for such great innovations as it shows us. We find in it not only that direct imposition of the arch on the column for which it has been specially called into notice, but the continuous wall-arcade, the corbelled column, the razeeing of the entablature almost to a stilt-block, precursor of Ravenna and Thessalonica, the bending of the whole entablature about the arch, as in Syria, the plate-band, the arch carried over a lintel and cornice without impost or pilaster. All these are not signs of a sudden impulse due to a great opportunity, but rather, it would seem, are part and parcel of a consecutive development in the art of architecture. If we turn to Central Syria, we find in the early churches, as old as Constantine or older, the basilican form well established, the nave and aisles with bordering arcades, the round eastern apse flanked by two

rooms like sacristies (the prothesis and diaconicon of the Byzantine churches), the clerestory, and the narthex across the front. In the great church, or rather quadruple group at Kalat-Siman, built, so far as we can make out, only about a century after Constantine's time, we see the clerestory beset by a range of corbelled columns carrying an upper range of corbels on which the roof-trusses rested, an apse surrounded without by ranges of like columns running up into the arcaded cornice, a projecting triple-arched porch with three gables crossing the front, and three eastern apses, as in a Western church of the twelfth century. The one feature wanting to the Syrian churches is the transept, as is natural in these small churches, intended either for monastic use, or for small congregations, and for the celebration of the service by a small number of the clergy.

II

If we look at the architecture of the Church in Italy in Constantine's reign, taking this as a conspicuous period rather than as the epoch of a great architectural transformation, we shall find architecture well advanced in the transition from classic forms to those of the Christian Church. We shall have reason to believe that the transition was accomplished in the East rather than in Italy,

and that it was a deliberate, consecutive development of architecture apart from its special uses, whether secular or ecclesiastical, although certain definite forms of buildings had been evolved for the special use of the church. The indications are that the transformations were the work of the same Greek people who had invented or shaped the classic architecture itself. By this time, apparently, the colonnade and entablature had generally gone out of use in the East; and under the guidance probably of Greek artists the arch, which Greece had refused in the days of her first architectural glory, was taken where the Romans left it, and made the dominant and controlling element both in design and construction, lifted from servitude to a regal position which it kept through all the Middle Ages. It is likely that Constantine first brought the new architectural forms into Rome—perhaps they had as yet no place in Italy, and that they found there an uncongenial home.

The kind of church which Constantine built, and which his successors perpetuated, must have been developed in the East, though it differs from the smaller churches which we have just noticed in Syria. That which Paulinus, bishop of Tyre, built, as Eusebius describes it, so far as we can understand his description, was substantially of the same type, and Eusebius does not stint his

words in describing its splendor. Tyre was at this time the most prosperous city of Syria, and the Church had been important there. In many cities of Asia Minor the churches were prosperous from the first centuries, and as they gained in membership and wealth, where they were not under a ban as in Rome, there was every reason for providing them with buildings of size and importance. The prominence of the early churches, the complexity of organization which they soon developed, the growth of ceremonial and ritual, all testify not only to numbers but to position and wealth. There is a significant edict of Licinius, Constantine's rival in the East, which orders that men and women shall enter their churches through separate doors, and which, whether or not it testifies to their orderly ways, indicates considerable importance in the communities which were so disciplined by imperial edict. It probably points to a system of which the need had come to be recognized, and which finds its recognition in the plans of the basilicas of that time, that is, the separation of the sexes among the worshippers.

I shall not go into the question of the origin of the Christian basilica; it is long, intricate, and difficult. It is enough to recall that secular basilicas were common in Rome, that they existed and were probably abundant in provincial cities, and that there is no record of the conversion of any

civic basilica to the use of the church. Constantine built basilican churches both in the East and the West, and the type was naturally the same, though there are indications of certain significant differences. One of his first cares was to redeem and reconsecrate the Holy Sepulchre. There had been, we are told, a systematic attempt of the pagans to obliterate it by covering it up with earth and by building a temple of Venus over it. The temple must have perished, for it needed supernatural intervention to enable him to find the sepulchre. He restored it and built over and about it a splendid basilica. It is not easy to fully understand Eusebius's description of this, owing to our uncertainty as to the meaning of the Greek technical terms—an uncertainty in which possibly the pious bishop had a share—but it shows plainly enough the principal points: first, toward the east was a great atrium apparently enclosing the sepulchre, with porticos on three sides; then, facing the east, a porch and three doors; then an inner vestibule; and, then the body of the church, "built up to infinite height, spread out to immensity in length and breadth." The splendor-loving Constantine would have it as magnificent as became the place where the head of the Church was laid, now that so much magnificence was gathered about the shrines of his followers. In his letter of instructions to Macrinus, bishop of Jerusalem, he

orders "that all the churches which in every State hold the first place, shall be far surpassed by the dignity of this:" "for this place, which is easily the first in all the world, must be worthily set off with every adornment." So the church was to be built outwardly of smooth-wrought stones and inwardly lined with varied marbles, divided lengthwise by colonnades or arcades, covered with fretted ceilings of wood, and partly with vaulting, and ended in a western apse, surrounded with twelve columns typifying the twelve apostles. I see no indication of a transept in this description, but in another great basilica, which Constantine, his mother, and Helena built at Bethlehem over the place of Christ's nativity, as he thought, and which survives to-day, the transept is conspicuous. The plan of this transept, to be sure, is so unusual for Constantine's time, having round apsidal ends, that some critics have concluded that it must date from Justinian's; but the structure of the building is said to be evidently of one date; its style is so clearly that of the fourth century, and so absolutely not that of the sixth, that in the lack of any trustworthy record that Justinian ever built at Bethlehem, and with the support of the history of the building, which is unusually continuous, I think we must conclude with De Vogüé that this is the original building. It is a five-aisled basilica, divided by rows of columns which carry wooden

architraves supporting the clerestory walls and the ceilings of the aisles. The nave has now an open wooden roof; probably it was at first a flat coffered ceiling. Nave and aisles reappear, as it were, beyond the transept, the choir ending like the transept arms in an apse, so that the east end is three arms of a Greek cross. This peculiarity does not appear in any of the churches built by Constantine in Rome, nor in any of those which were modelled on them. It is more than possible that the plan of this east end, which is essentially three apses looking toward a common centre, instead of the usual single apse, is due to the fact that here the focus of interest is in that centre, where is the crypt that contains the birthplace of Christ. It is a noteworthy peculiarity of its design that, although the arcade had become fully established, and though we may reasonably suppose it to have mainly superseded the colonnade in the East, here it is refused, and the columns carry an architrave.

Constantine's Roman basilicas differed essentially from this at Bethlehem in the arrangement of the transept. The three great basilicas, nearly contemporaneous, of St. Peter, St. John Lateran, and St. Paul outside the walls were of one type—five-aisled, with large transept, and single eastern apse opening from the middle of it. They had an open porch across the front, and before it an atrium surrounded by cloisters. These churches

fixed what may be called the Latin type, peculiar to Rome and to the small number of cities which took their precedents directly from her—except for the double aisles, which were rare—and adhered to in Rome herself, with all that conservatism which I have ascribed to her, long after the progress of Romanesque architecture in Italy and elsewhere had altogether changed the type of churches outside of her. In some of the lesser churches the transept was omitted, as in San Clemente, Sta. Maria in Cosmedin and Sta. Croce in Gerusalemme. The first of these three gives the best example that remains of the atrium of these primitive basilicas. Where that has disappeared, or was from the beginning omitted, we usually find a survival of it in the entrance porch opening with a colonnade or arcade in most cases, but sometimes overbuilt and closed, as in Sta. Maria Maggiore and Sta. Maria in Cosmedin, and serving as a narthex.

It is not worth while to dwell here on the details of these churches, which are pretty well known to architects, but I wish to emphasize two points which seem to me most characteristic, and which illustrate more than others the pertinacity with which decadent Rome clung to her own ways, and let the progress of the world go by. The first of these is the adjustment of the transept to the body of the church, and is the thing which most characteristically distinguishes the Latin form of church

or the Roman form. It is common to think and speak of all churches with transepts as cruciform, and to assume that the cruciform type prevailed wherever Christian churches were built. But the more precise and the better meaning of cruciform implies two members that mutually intersect, making four arms projecting from a centre which is common to both. In this sense the Latin churches are not cruciform at all; the cruciform church never prevailed in Rome till the Renaissance, and I have not been able to discover that it appeared there at all till the Gothic period. In the cruciform mediæval church the nave and transept penetrated each other, though by virtue of the predominating aspect of the nave and the uses of the choir, which occupied the eastern arm and the crossing together, and often took in part of the nave, the crossing came to appear as part of the long aisle of the church, and the transept-ends like twin arms added to a continuous body. The plan of the Latin basilica was not a cross, but a **T**, the apse being a mere excrescence on the transept. The relation of the two parts was very much like the head-house and train-house of a modern railway station. The transept was the dominant member of the building, a continuous hall against which the nave and aisle abutted and stopped short, and which further asserted its dignity by lifting its whole floor above that of the others.

This architectural exaltation of the transept was a characteristic of the Christian basilica, and it may well be that it belonged to great basilicas of the East which have disappeared. The early Eastern churches of this form which remain to instruct us are for the most part without transept, but they are all comparatively small, and naturally would vary, like the smaller churches of Rome, from the plan of the great ones. The motive of the transept is obvious. It was to provide an ample and exalted position from which a great number of privileged persons, including the clergy, and doubtless the superior members of the imperial court, who could not be confounded with the mass of the faithful in the body of the church, might share or watch the services.

The architectural mediator between the transept and nave was the triumphal arch. It is best seen in St. Paul without the walls, where the primitive arch remains, spared by the fire which destroyed the nave early in this century. Here its impost is an entablature which is borne by two great columns, much higher than those of the nave, which stand out in the line of the transept wall. Occasionally the impost is continuous with the entablature or main string-course of the nave, as in Sta. Maria Maggiore, but usually the arch claims superiority in an architecture on a larger scale than the rest, appearing only as a decorative feature of the

transept, to enhance whose dignity is its chief office. This disposition of the church, while it served its purpose by exalting and in a way secluding that part which was reserved for the dignitaries, was an injury to the architectural composition. It is imperial in sentiment, and an echo of it still survives in the Greek Church, where the priests do their office behind a screen, the Iconostasis, while the congregation waits in the nave. I say an injury to the architectural composition, for the nave, the original member, and far the more important in structure and effect, is degraded into a vestibule for the transept, which, for all its high function and the concentration of adornment about the centre, is in truth a mere cross-gallery. It is quite inferior in expression to the later form in which the nave is continued through to the apse, and the crossing appears as its natural climax, expanding upward into a great central tower as in the fully developed cruciform church of the Middle Ages, or into a dome as in the Renaissance church.

But this was the type which Rome preferred, and to which she held with that conservatism on which I have dwelt before. From her example, apparently, it became the basis of that type which with more or less variation is often called the Italian type, in which the transept is still continuous, and bordered on its eastern side with chapels or apses, of which the middle one is simply a little

more important than the rest. The type prevailed, I think, in provinces which were subject to the immediate influence of Rome, or were more or less excluded from that of the German blood which was poured into Italy—in the States of the Church, in Tuscany, and Campania, for instance. We find it in the great churches of Florence, where the church of Sta. Croce is a conspicuous instance; in Naples, as in the cathedral of San Januarius, and in a hundred well-known instances throughout Italy; it held its own till the invasion of Pointed Gothic, and even reappears in some churches of the Renaissance.

Rome held unswervingly to the Latin type until the time of the middle Renaissance, when, under the rule of Julius II. and Leo X., and the artists whom they called about her, she suddenly flung away her conservatism, and became for the time the leader of progress, though it was progress in the revival of her own ancient forms of art and literature. I do not know of any acknowledgment in Rome of the cruciform type before this period, unless it be in her one Gothic church of Sta. Maria sopra Minerva. When in her lesser churches the transept was omitted, she kept the form unimpaired in other respects. To be sure, in the small church of SS. Vincenzo ed Anastasio the nave is carried through the transept, and the apse attached to it, but even here the cruciform shape is not suggested,

for the transept arms, lower than the nave, merely abut against it behind two larger arches in the continuous arcade. There is no thought of interpenetration; moreover the whole east end, including the transept, is an afterthought, added in the fourteenth century, and an anomaly which belongs to no type or series of buildings. It would be interesting to find out when and where the idea first occurred of pushing the nave through the transept, and joining it to the apse. The suggestion is an obvious one, and the thing once done, it was natural to push both nave and apse beyond the farther transept wall, and make an eastern arm. When the triumphal arch at the entrance of the transept and that where the apse had joined it were retained, and similar arches crossing the transept marked the continuation of the nave, the cruciform church was complete. The crossing became part of both nave and transept, but the need or the habit of extending the choir into and even beyond the crossing prevailed, the transept arms were soon disused in the celebration of the service, and became subordinate instead of principal, while the united nave and choir took their natural predominance, to the architectural benefit of the church. This arrangement was sufficiently foreshadowed in those smaller churches of Rome which had no transept, of which San Clemente and Sta. Maria in Cosmedin are the best known examples. In the

last the continuity of the longitudinal members is emphasized by the exceptional fact that the aisles as well as the nave end in apses. But Rome refused the cruciform plan.

The second point which I wish to emphasize, wherein Rome clung to her classic precedents, is her favor for the entablature rather than the arch. We have seen how the classic Romans subjugated the arch, which was their own, to the order, which had been to them the representative of what was august and sacred, while the arch had been servant of all work. The Greeks, as the Syrian buildings show, had before Constantine's time rehabilitated the arch and given it the honor that suited its kingly qualities, but the Romans in their conservatism seemed to look upon it as an upstart, unworthy of the place it had won. The arcade was far cheaper than the colonnade, for it required fewer columns. It was easier to build, for it was built of much smaller stones. It was more serviceable, for it favored in the interior that openness which was one great advantage of the basilican form of church. Among the three great basilicas of the fourth century, in that which was the most august, if not the most venerable, that which Constantine built at the special intercession of Pope Sylvester to Peter, the patron saint of Rome and head of the Universal Church, the nave was lined with a colonnade and the arcades were remanded

to the divisions between the aisles. The other great basilica of Sta. Maria Maggiore, built by Sylvester's successor, Liberius, owes its striking effect to the interminable colonnades with their continuous entablatures that border the nave, and tempt us to believe that the Romans were right if they ascribed a peculiar solemnity to the unbroken order. The colonnade appears even in the East in the church of Helena and Constantine at Bethlehem, as we have noticed; we find it once at Constantinople in the oldest church there, the St. John of Studios, built in the fourth century. In Rome it reappears at intervals in the more memorable churches all the way to the thirteenth century; in San Lorenzo fuori le mura, where it is pieced together out of fragments laboriously gathered from various buildings; in Sta. Maria in Trastevere, in Sta. Prassede, San Martino al Monte and others. In several of these churches, in Sta. Maria in Trastevere and Sta. Prassede, for instance, relieving arches are built in the frieze, to take the weight from the architrave, and hidden by the decoration rather than give the arch the place which its constructive importance deserves. While the entablature was banished from the rest of Europe in the centuries of her depopulation and poverty, when building had almost entirely stopped in Rome, her preference still shows itself in San Lorenzo in the sixth century, in Sta. Prassede in the

ninth, and when she began to revive in the twelfth, when the fully developed Romanesque was ready to break out into Gothic outside her walls, with a new prosperity came a new reversion to her old love, and the church of Sta. Maria in Trastevere was rebuilt in the old way, and the porch added to the front of San Giorgio in Velabro, and that built across the front of Sta. Maria Maggiore and since covered up by Fernando Fuga, but shown in an illustration quoted in Letarouilly's book, eschewed the arch and went back to the entablature. Even the sumptuous cloisters of San Paolo fuori and St. John Lateran show for their principal feature above their graceful arcades the revived entablature, not true to the old proportion, but faithful to the old idea.

III

If Augustus boasted that he had found Rome of brick and left her of marble, we might almost as well say that Constantine found an architecture of marble and left one of brick. The temples of Rome had been mostly of marble; the early Christian churches were mere brick walls roofed in. Their one strictly architectural feature was the arcading; an exuberant decoration was the compensation for their architectural poverty. They were really churches of the decorator rather than of the

architect. After the transfer to Constantinople, the East and the West took different ways in art as well as in politics. In the East the prosperity of a renewed empire kept the arts alive, and outside architecture was not forgotten ; but the Byzantine style quickly supervened and the basilicas disappeared. In Italy there was for some centuries only the early Christian. There the art of sculpture had died out, and that of stone-cutting nearly so before Constantine's reign. But Roman brickwork had been abundant, skilful, and varied. There were always masons, and churches could be built of brick and rough stone, to be left bare outside or plainly plastered over. So they were built, so we find them in Rome and Ravenna, and scattered over Italy in other places. The only things that the stone-cutter was called upon to do were to cut the arch-stones for the arcading, to fit together the pieces of architecture and other old fragments that were worked in, and occasionally by a *tour de force* to supply an imitated capital where an ancient one was not forthcoming for a stolen shaft, which he did pitiably enough. Brick-building became again, for a time, as it had been in the beginnings of Rome, the architecture of Italy, so far as any remained. The arches of the arcades themselves were apt to be simple brick arches encased in marble, where they were not covered with plaster or mosaic. The skill of the

bricklayer even in that day of decadence was enough for what was asked of him in the simply designed churches, or, more exactly, perhaps, the demands were limited to what his skill could furnish. In Rome, where, except outside the walls, the city was closely built, and churches had to be accommodated to lots where they were hemmed in on sides and rear, as we may see in the hopelessly unsymmetrical plan of San Giorgio in Velabro, for instance, the exterior was of little account, except in buildings that are meant for public monuments. The porches and the overflow of the inside decoration upon the front were all that needed attention. That abiding reverence for the Order and for the lines of the entablature which showed itself in here and there retaining the horizontal lines of the entablature within I have already noticed, and it deserves keeping in mind, for we shall have to refer to it again more than once. But for the outside the monumental aspect was renounced in Rome, whatever the reason was, and the brick walls were, it would appear, simply plastered over. In Ravenna, where the most important group of early churches is preserved, and where the eastern influence was strong, the buildings dating from the end of the fifth century and early in the sixth, that is, nearly two centuries later than the first great churches of Rome, are still of brick, and show the lingering traditions of Roman brickwork, while

there are in them many things that, like the stone architecture of Syria which I have mentioned above, are distinctly significant anticipations of the peculiarities of the Lombard style. They were built to show unplastered, and considerable skill is shown in the effort to relieve the bareness of the walls. We find in them, and also in some nearly contemporary work at Rome, carefully designed brick cornices, with corbel tables and ratchet-courses, string-courses of moulded bricks, and round-arched panels in which the windows are enclosed, separated by pilasters running up from the ground in the Lombard fashion.

Building having thus passed into the hands of the bricklayers, who had nothing of the art of the classical architect, it had inevitably to lapse away from classical forms. These were stone forms evolved in the development of the architecture of the beam; inasmuch as brick beams are impossible, the trabeated details, which were also unsuited to brickwork, disappeared with the lintel. The arch had already been emancipated from the order, in the way that I have mentioned in the essay on the Græco-Roman style. In the desolation, poverty, depopulation, and repeopling that presently fell upon Italy the art of architecture passed away from her, as the art of sculpture had passed away. When, some centuries after, a new architecture was needed, there was no one to pro-

vide it but the untrained artisan. He worked it out constructively, as those who come to art from the mechanical side have always done, and so it started to all intents anew, from a constructive beginning, as the architecture of the Greeks had started fifteen hundred years before. Its beginnings were obscure and rough; it took centuries to bring it into shape again, but it was unfettered by any fixed tradition. A new constructive principle, the application of the arch, underlay and directed it. Its evolution went on consistently for another seven hundred years or so in an unbroken line through the successive forms of Romanesque and Gothic, till there came in the fifteenth century a sudden transformation, as by the shift of a magic lantern, into the fashion of the Renaissance.

But it was outside of Rome that these changes went on. Within her the classic feeling remained, and though in her helplessness she let the forms of the old architecture slip away from her, she took no further share in the new than to accept that one innovation of Constantine, the basilican arcade. As we look back over her history we see imaged in her architecture the same self-consistency, the same persistent individuality that marks her political endurance. All other cities whose architecture records their history show that they have been different cities at different times. In

Rome alone that adherence to her old tradition which held her to a straight course in the time of Constantine is embodied in all her later aspects except for the vagaries of to-day. She is the one architecturally harmonious city in the world, as she is the oldest. She has clung to the forms of her architecture as she has to the traditions of her supremacy, and both are witnesses to the strange tenacity which has enabled her to assert her primacy through all ages, in spite of poverty, neglect, humiliation, and all that would degrade another city. She is to us a symbol of stability, a symbol perhaps of indifference to that progressiveness which the world loves, often to the things that mean real advance in the condition of men, but also of a noble endurance of time and disaster, of a steadfast dignity which makes the nobility of later ages seem petty, and which has held the garment of her majesty about her—at least till our day.

EARLY CHRISTIAN ARCHITECTURE

I

THE beginnings of Christian architecture are dark, as are the beginnings of every architecture. Starting in obscurity and passing her first years in persecution, the Church had no need or opportunity for conspicuous buildings. But when she began to prevail, and to take possession of the world, her growth in numbers and means was so great that the buildings which had served her at first were useless to her. She came, moreover, out of no such period of primitive civilization as the earlier religions were born in, and therefore had no art which grew in her from its infancy, no monuments which brought down with them the reverence of her earliest days, like the primitive temples of Greece and Rome—like the Heræum of Argos, for instance, which, surviving from remotest antiquity and reverently guarded, was only renewed and replaced piece by piece and with stone for wood as it fell away in process of decay. The memorials which she cherished were the tombs of her



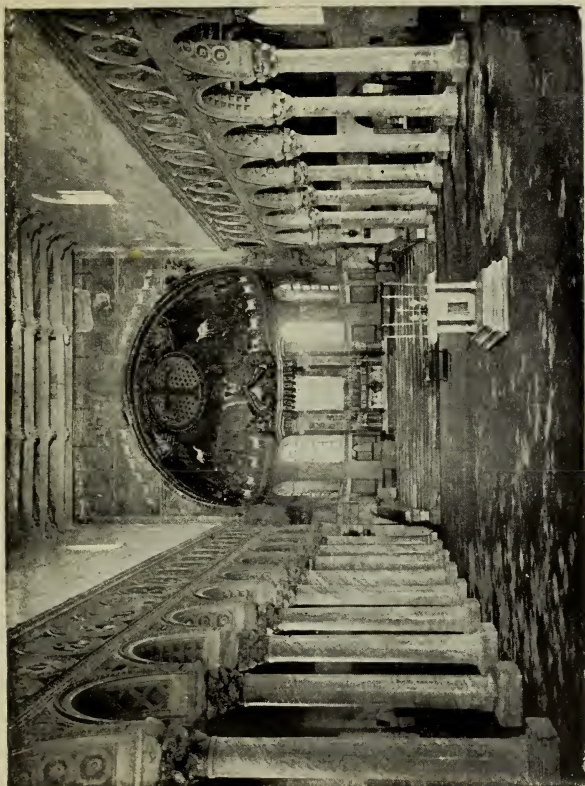
SAN APOLLINARE IN CLASSE—RAVENNA
Early Christian Basilica

PAGE'S CONDENSED ABSTRACTS

1

The following are the names of the persons who have been elected to the office of Secretary of the American Society of Civil Engineers for the year 1900. The names are given in alphabetical order of the surnames. The names of the persons who have been elected to the office of Treasurer are given in alphabetical order of the surnames. The names of the persons who have been elected to the office of Vice-President are given in alphabetical order of the surnames. The names of the persons who have been elected to the office of President are given in alphabetical order of the surnames.

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martyrs, and it was not till the day of her prosperity that she could adorn these as became her veneration, or even visibly commemorate them without exposing them to desecration. When in the fourth century after Constantine's Peace of the Church and the public conversion of the Empire, she found the wealth of cities and nations in her control, she fell immediately to covering the world with new churches, and those of her old ones which survived were remodelled or abandoned. So we are left with no examples to show the architecture of her childhood. She had, however, no need to provide an art of her own. The art of the world had become hers with its wealth. It was a fully developed art, abounding in forms for every use, in spite of the decadence which had already set in. The impression that Christianity had to create an art, or even forms of art, and did so *de novo* is a wrong one. She naturally took into her service what was ready to her hand, finding it sufficient for her present needs, selecting and combining the elements that suited her. Only as she formed new habits, and new wants developed with her growth, did she gradually transform and renew the arts of Rome and Greece.

The oldest Christian churches that we know come from the reign of Constantine and later. They show us types so well developed and so accepted that we must believe them to be the out-

come of confirmed habit. The main types are two, round churches and basilicas; these two furnished the models for two great classes of churches that have persisted through many centuries. With the round churches are classed not only the circular but the whole group of what the Germans call *Central-kirchen*—those which are symmetrical about a geometric centre, whether circular in plan, or polygonal, or crosses with short equal arms, or star-shaped. They are in great variety, from the simple circle or octagon which we see in the tomb of Theodoric or the old baptisteries to the most complicated system of aisles, niches, chapels, and arms radiating about a round or polygonal middle, like San Stefano Rotondo at Rome or San Vitale at Ravenna. Those buildings were in no wise suited to the whole ritual of the Christian church, nor to the accommodation of the great congregations which it gathered; their form was adapted to the consecration and preservation of a central object—a font, or the tomb of a potentate or conspicuous saint. It was a Roman form, familiar to the world in the mausoleums of Augustus and Hadrian, the tomb of Cecilia Metella and many others, a form which in imitation of the Romans has been used for the monuments of the great from their day to ours, in many lands and in many styles. It was peculiarly suited to baptismal use, so that this round type has been com-

mon for baptisteries everywhere. When the dome was added to it, it assumed a monumental shape which has made it attractive in all ages ; it became the nucleus of the prevailing Byzantine type, and was a favorite of the artists of the Renaissance. Constantine himself set the Christian example when he built a round church over the Holy Sepulchre at Jerusalem, where he joined with it the other great type of Christian church, the basilican, an example which was resumed and followed often in Europe after the Crusaders had made the West familiar with the Sepulchre, especially by the Knights Templar, whose churches were habitually built after this model. But the type was variable, its uses were special, and though it was kept alive for monumental purposes, it did not establish itself as a ruling type.

The second type developed into the church which was called basilican. Much labor has been spent and many theories have been evolved in trying to find an origin for it. Perhaps all the theories have sinned in that they have been exclusive, prompted by that familiar inclination which men have to find a simple cause for even a complicated result. The oldest, long-accepted theory which Alberti propounded, guided by the identity of name, is that the Christian basilica is only the Roman basilica—a building of analogous form—converted or copied for Christian worship. Lately

other theories have been brought forward: that the basilica was copied or developed from the Greek Schola, a building for school use, or from the chambers of the catacombs; that it grew directly out of the plan of the Roman house, or the Greek house; that it was a building planned afresh to suit the needs of Christian worship. This is not the place to enter into such controversies, which demand the compass of a volume and a long array of arguments and citations, but it is difficult to refrain from noticing a few points. And first, what was a basilica? The Christian basilica, which we find fully shaped during Constantine's reign, and which determined the form of churches for hundreds of years after, was an oblong building divided lengthwise by rows of columns into aisles, usually three, sometimes five. The middle aisle, or nave, was higher and wider than the others, and furnished most of the light for the church through a clerestory of windows set in its long walls above the colonnades and the roofs of the aisles. It was entered from one end through doors, one for each aisle, and at the other end, against the nave, was a semicircular apse or bay, lined with seats for the clergy, in front of which was the altar. Often a transept, as high as the nave if not so wide, crossing the back of the church, was interposed between the apse and the three aisles, which opened into the transept each

by a great arch ; the principal arch, at the end of the nave and opposite the apse, being called in later times the triumphal arch. Across the front of the church and over the entrance doors was built an open porch called the narthex, resting on columns. Before the narthex was the atrium, an open squared court built round with colonnaded or arcaded galleries, of which the narthex made one side, and entered through a gateway opposite it. This is the characteristic type of early Christian churches throughout Europe, and inasmuch as it represents the first architecture of the Latin church, it is convenient to call it the Latin type.

The type is well known to us in the great basilicas of St. Paul outside the walls and Santa Maria Maggiore, and approximately in the smaller ones of San Clemente and Santa Maria in Cosmedin in Rome, in the two great basilicas of San Apollinare at Ravenna, and in many others ; but the atrium, which seems to have been universal, at least in important churches, in Rome and probably in Italy, though not common in the East, has in most cases disappeared. There is plausibility in all the theories of its origin which I have mentioned, but no close correspondence with any of the prototypes. We have no record that any Roman basilica, or any other, was ever taken for Christian worship, or other public buildings, except in unusual cases a temple, like the Pantheon or the

temple of Antoninus and Faustina. The Roman house, the example which has been most lately pressed, hardly accounts for all the facts, and there seems to be no need of mooring our explanations to that. It is likely that the basilican church, like every other type of building that has become fixed and exemplary, was the gradual and tentative development from wants that showed themselves successively, and that it took its ideas wherever it found them. There was time enough for this; between the perfected church as we see it in Constantine's reign and the founding of the Christian religion some three centuries had intervened. The Christians had passed through seasons of persecution, when they had to hide their worship, but they had grown very numerous; they had pervaded the civilized world, had converted many of the rich and even of the powerful; they had come out of hiding; in the East especially they formed wealthy and important communities. When Constantine declared himself a Christian and proclaimed the new religion as that of the Empire, he did not join himself to an insignificant, inconspicuous, unimportant sect; he took the side of one great party in the state, a party that had never been in power, and had lately under Diocletian been the prey of violent and desolating persecution from the party which was in power. But it was a rapidly growing party, the progressive

party, which, though as yet it had no share in public affairs, apparently contained a great proportion of the best activity of the Empire, at least out of Rome, and was coming to include, it is likely, a preponderating influence among those lower classes to whose support, next to that of the army, the emperors had learned to appeal. It had even to a considerable extent gained converts in the army itself. The Christians were in Constantine's time a numerous body, an important part of the whole people, so important that Galerius had tried to depress their power by persecution, not for the sake of religion, but for reasons of state; and they must have been so before, for such a body does not grow in a night. If we had no records to show it, we should have to believe that they had many churches, but there is abundant record. The earliest church building of which history tells us is that "temple of the Christian Church" which, as the Chronicle of Edessa declares, was destroyed by a great flood in that city in A.D. 201. But what there was in Edessa there was, doubtless, in many other cities of equal or greater importance in the history of the Church. Allusions here and there in the historians assure us that wherever the pressure of persecution was lifted the Christian worship came to the light, and the churches multiplied. Before the persecution of Diocletian, we are told, there

were in Rome itself more than forty Christian basilicas, and Eusebius is eloquent over not only the number, but the size and splendor of those in the East, bewailing their loss in the time of persecution. Making all allowance for the churchman's enthusiasm, we could not believe that he was speaking of few or insignificant buildings, even if we could believe that there was a sudden jump to an elaborate and complex plan sufficiently organized to suit for centuries the wants of a pompous ritual, a great hierarchy, and enormous congregations of every degree.

II

From the point of view of art, it was a fortunate coincidence that Christianity came to prevail at a moment of transition in architecture. The conservatism of Greece, backed by the artistic conservatism of Rome, had begun to yield to radical changes of detail which were leading the way to an actual metamorphosis of style. The setting of the arch directly upon the column had meant the permanent disruption of the Order which had stood for the whole of classic architecture; and that was the prelude to the breaking up of the classic style. How or just where the breaking up was accomplished it is hard to say. The ravage of war and depopulation, still more the greater ravage

of new growth, of states reformed, of prosperity renewed, and cities rebuilt, have obliterated most of the traces of the transition. It is only in cities that have been suddenly ruined, like Selinus or Palmyra or Pompeii, or have sunk into perpetual coma like some of the mediæval towns of Italy and Spain, that we may look to see the record of their early building preserved. The enormous spread and duration of the Eastern Empire, the repeated incursions of the Saracenic conquerors, the shifting mastery of opposite rulers and progress, the long decay here, the repeated revival there, these have so changed the face of the whole East that only in neglected corners is there here and there a remnant to hint for us at the changes of these early times. One thing is clear, that the transition did not take place in Rome, nor consequently in those regions whose progress was directly guided by her influence, that is, in Italy. The history of Rome, the phases of her architecture, are written in her monuments without an interruption. The last buildings of pagan Rome are unwaveringly classic. The baths of Diocletian, the basilica (so called) of Maxentius, which Constantine finished in his own name, the triumphal arch with which he commemorated his triumph, in spite of decadent workmanship, negligence in proportion and detail, are the full embodiment of classic ideas, with no trace of new intention. Be-

tween them and his Christian buildings there is an absolute break, a complete change of type. The later buildings bear no witness to the transitions through which the change was accomplished. Yet such a change has never been seen in the history of architecture without a considerable series of intermediate steps, except in some modern instances where an old style has been deliberately revived by copying. The one sign of a lingering attachment to the old ways that the early Christian churches show is the use in Rome in some instances of the entablature instead of the arcade to carry the walls of the clerestory. In the old St. Peter's, built over the apostle's grave by Constantine, in Sta. Maria Maggiore, built a quarter of a century later by Liberius, in San Lorenzo outside the walls, and in some churches of less importance, the naves were separated from the aisles by an order with the classical entablature, instead of the arcade borne directly on columns which became from the beginning the distinction of the Christian churches. This variation, which typifies the unimpregnable conservatism of the city of Rome, is the sign of a certain classic instinct that was never eradicated from her. It cropped out in her under the full swing of the Middle Ages among the few works of restoration or new building that were undertaken in her season of poverty. It was one of the links in the chain that seemed to bind her

permanently to her imperial greatness, and gave a point of attachment for the Renaissance movement in architecture when that passed over to her. But it was peculiar to Rome and the neighborhood in the range of her immediate influence. There are scarcely any examples of it to be found outside this range; one is in the basilica of the Nativity built at Bethlehem by Constantine, another is a small church in one of the towns of Central Syria. In Rome itself, except for this one almost pathetic protest against the utter abandonment of the glories of her old architecture, the triumph of the new was complete, and even in most of her early churches the distinctive arcade took its place. The other great basilicas of Constantine, St. John Lateran's and St. Paul's outside the walls, rivals of St. Peter's, were built with arcades in the new way, and so were the most of the one or two hundreds of churches which followed them in the next twelve hundred years.

It is to the East that we must look for evidences of the progress of this transformation. All progress and all initiative had died out of Rome and Italy long before Constantine's accession. All the vigor of the Empire was in the East, and Constantine only followed the fact when he transferred the capital to that quarter. The real strength of the realm lay already among the barbarians which it had lately conquered and absorbed, and whose

kindred were soon in their turn to conquer the Empire and rejuvenate its population by the admixture of their own blood. They furnished the armies that still defended it; they had for a century furnished the capable men among its emperors; its generals and administrators came from them. In the East, which, including Greece, had provided most of the architects and other artists that had made Rome beautiful, was apparently all the spirit of invention and progress that transformed the arts. The cities of the East have been but little explored by archæologists; the unvisited ruins of Asia Minor probably cover a vast amount of instructive remains. Here and there, in Baalbec, Palmyra, Antioch for instance, we can see the modifications which classical architecture underwent on its way to become mediæval.

The most striking examples are in the district called the Hauran in the middle of Syria, where a whole architecture of the first Christian centuries has been surprised within a few years, as the remains of Pompeii and Herculaneum were in the last century. Here, in and near a valley behind the Lebanon range, was a series of small towns which had been overwhelmed, laid waste, and depopulated by the Arabs in the first years of the Mohammedan conquests. Waste and depopulated they have remained ever since, not reoccupied,

and so not destroyed, unvisited and almost unknown to geographers. At the time when they were built the country was already bare of timber, and the buildings, all of hard stone even to floors and roofs, doors and window-shutters, have borne the wear and tear of climate more stoutly than the ruins of Egypt. It is a singular and priceless benefit to the history of architecture that habitually their dates, which extend from the second to the seventh century, are marked upon them. Here we see houses, squares, public buildings, convents, churches—whole towns grouped about narrow streets, scarcely injured by twelve centuries of neglect. Their carefully wrought and often elaborate architecture shows in the course of five centuries a range of innovation that astonishes us. There is not only the cardinal change which distinguishes Diocletian's palace, the setting of the arch directly on the column, but a score of other inventions which we had been wont to ascribe to Byzantine architecture or to the Romanesque builders of Italy and Germany—balconies, corbel-tables, pilasters running up into arcaded cornices, broad arches spanning the naves, or carrying clerestories from pier to pier, domes set upon polygonal or square substructures, clustered piers, even the shafted and arcaded eaves-cornice which is to us the most conspicuous characteristic of Lombard architecture. The plans of

the churches, and apparently of some of the pre-Christian buildings, are those of Christian basilicas, and the atrium itself, which seems to have been mostly banished from the Eastern churches, is found here. We are almost tempted to say that there was nothing new in Romanesque architecture, and that its whole development was prefigured in the developments from classic architecture which we find in this provincial region, part of the kingdom of the Seleucidæ, where the language was Greek and the whole civilization must have been of the same. It would almost seem that the inexhaustible Greek, who developed the most perfect arts within their limited range that have ever been seen, who invented and shaped classic architecture, who provided for the Romans the great modification of it that they required, who turned aside to create his own Byzantine version of the mediæval, furnishing the world with the dome that was to make the greatest triumph of the Renaissance as well, had forestalled and shaped at least the outside forms of the whole domain of Romanesque builders.

III

That the Church should flourish most in the most progressive parts of the Empire was natural. The East, in which was gathered the vitality of the civilized world, was the home of the Church,

so far as she can be said to have had a home in the world at that time. Up to the fourth century her growth, the development of her organization, her literature and her ritual, her advance in numbers and importance, were mainly in the East. In the course of the second century there was a great increase in the complexity of her administration and in the formalism of her worship. The modern student is surprised to see how early her hierarchy became rigid and her worship hardened into elaborate forms. With a more elaborate ritual must have soon come the need of special provision in her buildings, and occasional indications in her writings argue for this. The first assemblies of Christians had been scattered and independent; every knot of friends seems to have worshipped separately. But the insufficiency of this was soon felt. In the second half of the first century the exhortations of Ignatius, bishop of Antioch, pleaded urgently for union in worship; before the end of it all the faithful, in Corinth for instance, were united in one congregation, and the consolidation went on through the East. Persecution, when it followed, was a strong consolidator. By the third century the clergy was segregated from the laity, the faithful were ordered in classes, the ordinance of the religious services was minutely appointed. When the earliest churches come to our notice they are adapted to their complicated ritual with a

formality that smacks of imperial authority. The bishops have become great potentates ; the clergy of presbyters and deacons is a highly organized and numerous body ; the wealth at the disposal of the Church is already great. With the favor of Constantine the depressed Roman Church entered suddenly into the state and magnificence that had been preparing for her in the East. Let us hear what Eusebius tells us of the basilica which Bishop Paulinus built in Tyre at the beginning of the fourth century, after the cessation of Diocletian's persecution, but a dozen years before the first of the Constantinian basilicas was built in Rome.

The bishop, he says, enclosed the whole site with a strong encompassing wall for protection's sake—like the peribolus (that is the word he uses) of a Greek temple—and through a broad and lofty outer porch (propylon) which faced the rising sun he gave the coming visitor a glimpse of the beauty within. But that this visitor might not tread the sanctuary with profane and unwashed feet, he set apart between the porch and the church an ample fore-court, girt about with colonnades under a sloping roof, whose pillars were joined with wooden railings up to the mid-height of a man ; and the court was open to the view of heaven, to the sunlight, and to the air. In the midst of it, before the front of the church, was a fountain with a full flow of water for the washing of feet. This was the

first station for those who entered, both a fair adornment of the church and a seemly place for lingering to him who waited for entrance. Then, surpassing the beauty of all these things, he ranged within a second and greater porch the entrances of the church, three doors in line, which looked again toward the rising sun. The middle door he made both higher and broader than the others, and he overlaid it with plates of brass and with carving, so that it stood like a queen, with a handmaid on either side. In like manner he arranged within the church pillared aisles on either hand, as many as the doors, and above them, that there might be abundant light, he set windows in order, and fitted them with comely gratings of wood. Of rich and precious materials he built the kingly house, and in the generosity of his sacrifice he spared no cost. "Therefore," continues Eusebius, checking himself at a moment when his testimony would have been precious to us, "it seems to me needless to recount the length and breadth of the building, its splendid beauty, its majesty beyond the reach of words, the glorious aspect of its particulars, its walls that soar to heaven and the cedars of Lebanon that rest upon them." After he had so finished the church, the account goes on, Paulinus provided it with lofty seats in honor of the clergy, and, moreover, with benches ranged in fitting order for the congregation. But, above all, he set in the

midst of it the most holy altar; and the place of this, that it might not be invaded by the crowd, he enclosed with barriers of wood, crowned by cunning carved work, wonderful to look upon. Even the pavement he did not neglect, but adorned it beautifully with rich marbles. Finally he gave heed to the outside of the church, and built apses and walls against its sides artfully and of large size, and opened them with doors to the interior. Such buildings, he says, did our blessed Solomon, the builder of this temple, provide for those who still waited for the purification of baptism. The description is clear, although the good bishop of Cæsarea fails us at some points, and it gives us the picture of the complete basilica of the fourth century, as Constantine repeated it. There is no mention of a transept, which was probably lacking, since it was not usual in the East, nor of an apse for the clergy, which doubtless existed, for we know of no church without it. But the seats for the presbyters which lined the apse are described, as well as those for the congregation, of which we read little, though the writings of the church show us that at least in some parts it was the habit of the congregations to listen sitting to the reading and preaching; and the altar railed off from the crowd of worshippers is mentioned. The orientation, it will be seen, is clearly that of the classic temples, and, indeed, of the temples of the whole

East, the doors being open to the sun as it rose, a custom which, after some vacillation, the church definitely changed, turning, as a rule, the apse and altar toward the east, so that the whole congregation faced in that direction. The basilica which Constantine adjoined to the round church that he built over the Holy Sepulchre seems also, according to Eusebius, to have faced the east, and the same may be said of the three great basilicas of Constantine's time in Rome, St. John Lateran, St. Peter's, and St. Paul's outside the walls.

We see then that when Constantine came to build churches the type was already fixed: there was practically nothing left to do in shaping it. The one new thing which seems to have been done in Rome was to add the transept. This, as well as the enormous size of the great churches there, was clearly due to the multitude of believers who had to be provided for, and the great increase of the number of the clergy—bishops, presbyters, and deacons—who must have their own place plainly marked off from the congregation and subdivided into three orders, for which the apse alone no longer sufficed. The emperors and their household, too, could not be confounded with the mass of the worshippers, and there must be room apart reserved for them.¹ The three great churches

¹ It had not taken many generations to lift the church above that level of brotherly equality that belonged to it under the

were of extraordinary size because the Lateran basilica was the special church of the bishop—it was the chapel of the popes so long as the Lateran was their residence, that is, until they went to Avignon—and the other two were dedicated to the two great apostles who had suffered martyrdom in Rome, and the growing cult of the saints made the population flock to their shrines.

IV

I have said that the evolution of the basilica was from the beginning dictated by the growth of the ritual. The atrium was the place of gathering and

ministration of Peter and John and Paul. The apse or hemicycle round which the presbyters sat in dignified order was at first set up above the body of the church, and the bishop's throne was high above the rest. When the church became imperial, and the transept was added to make room for more dignitaries, that too was exalted over the mass of believers. Its front wall and the triumphal arch which opened into it, were decorated with all the splendor which the art of the Empire could give. It is hardly worth while to inquire too curiously into the relative shares which worldly pomp and religious reverence had in this exaltation. A curious poem of Gregory of Nazianzus, bishop of Constantinople in A.D. 380, gives a characteristic picture of the assembling of worshippers in his own church. He sees himself, in a dream, exalted on his episcopal throne, while the presbyters sit ranged about him on either side. The deacons stand in order below; the great crowd of the faithful swarms like bees against the barriers, while others stream in behind through the sacred doors, and the maiden lambs and chaste matrons sit listening in the lofty galleries.

of purifying, the anteroom and the place of baptism. The unconverted, the catechumens, the penitents, waited there, as we have seen, and in the narthex. Within the churches it was early found desirable to separate the sexes. The fact that men and women attended worship together in crowds, especially at night, that they celebrated their communions or love-feasts together was itself an offence, most of all in the East, where the segregation of women was traditional, and made it easy to associate the new religion with the worship of Venus and Cybele, of Astarte and Mithras. One of the earliest complaints of bigots and scoffers was that the Christian meetings were scenes of debauchery. A well-known letter of the younger Pliny to Trajan shows how these suspicions led to his interfering with these meetings by the emperor's command, while yet he was disposed to justify them. The importance that was ascribed to separating the sexes is shown by many allusions to it in the writings of the Church fathers. The edict of Licinius, at the beginning of the fourth century, either recognized or established a rule under which men and women entered at separate doors, where doorkeepers stood ready to remand them to their places. The assigning of one side of the church to the men and the other to the women corresponded naturally to the division of the buildings into aisles, and the position of the

doors ; but in the eastern churches a severer division was common, the women being confined to an upper gallery over the aisles, which was called the gynæceum. This last distribution, which, perhaps, would hardly suit either the relative number or the temper of the fairer worshippers in our day, was adopted in many places in the West, and was maintained in conventual churches through the Middle Ages. The system of construction to which it led, of building the aisles in two stories, even in churches which were non-monastic, and for general uses, appeared in various churches throughout Europe down into the thirteenth century. The cathedrals of Paris, Laon, Geneva, and Peterborough, for instance, are so built.

The Church had inherited from the Jews its fondness for psalmody, as well as many other details of religious observance. Is any merry, let him sing psalms, says the apostle, and the story of the early Church is full of accounts of the singing of the Christians in their worship. By the fourth century it was found advisable to establish a prophylactic which the Church has maintained ever since, by intrusting the psalmody to a special body of trained singers, the *chorus psallentium*, for whom a space was reserved, not among the clergy, but at the end of the nave next them, and this too was surrounded by a barrier. The bishop had in the beginning delivered his sermon from

his chair at the back of the apse, *ex cathedra*, but as the churches grew larger, and one obstacle after another, living or ritual, was interposed between him and the body of the congregation, this became impracticable ; a special desk or pulpit was set up against the barrier of the chorus on one side, and another opposite for the lector's reading of the Scriptures. These twin desks, the ambones, became an essential part of the furniture of the churches, and were singled out for special and elaborate decoration, as many examples remind us. After the musical liturgy was remodelled and schools of singers established in the West by Gregory I., the singing became the duty of the clergy, especially among the monks, the place of the chorus was included within the clerical precinct, and the name "choir" came to cover the whole space reserved for the celebration of the service.

As the worship of the Church grew from congregational into ritual, the altar naturally came to be the most important point in the building. At first it served only for the consecration and distribution of the elements of the Holy Supper. In the beginnings of the Church this ceremony, celebrated at night as the passover had been, and in small private meetings, was not a mere observance, but an actual meal, for which the partakers brought their separate contributions of bread and wine to

be consecrated and consumed in common. When the celebration which, if we must believe the testimony of the apostle Paul as well as that of outside heathen, had become in many cases an abuse and even a scandal, was narrowed to a religious commemorative ceremony and attached to the morning service in the churches, a table or altar was needed on which the elements could be laid and consecrated by the bishop before they were distributed by the deacons. This was at first in the form of a table for more common uses, a slab of wood borne on four or more pillars. In time wood was exchanged for stone; but till about the fifth century the form was still the same. Refugees who took sanctuary in the churches would creep under the altar like children, and cling to its supports. Pope Vigilius in one of his encyclical letters in the fifth century tells of taking refuge under the altar of St. Euphemia, whence he was dragged out by the feet, clinging to its legs with such tenacity that if the surrounding clergy had not held obstinately to the table he would have pulled down the heavy slab upon himself—and possibly have extinguished his encyclicals forever. Indeed the absence of altars of sacrifice and of the characteristics of ancient worship was a reproach among the heathen, and Minutius Felix exclaims: “Cur nullas aras habent, templa nulla, nulla nota simulacra?” Why have they no altars, no temples, no familiar statues? But

when after the Peace of the Church the cult of saints and martyrs, which had been obscurely carried on in the catacombs and tombs, grew into great public observance, and churches were built over the graves of the saints, these became places of pilgrimage for thousands, and it was important to bring the sacred remains into public view. As the habit of martyrolatry increased more and more, and bodies, bones, or other relics became a necessity to every church, it became the habit to place them under the altar, which was then boxed in, and became a monument with a cavity in it called the *Confessio*, and a window in front through which the relics could be seen and revered. Altars yet remain that have the transitional form, in which the enclosure occupies only the middle of the table, and the slab extends beyond it, supported by legs or pillars at both ends. A tabernacle was presently built over it, in the form of a roofed canopy supported on pillars, called a *ciborium*, or afterward in Italy a *baldacchino*. This suited well with the later ritual under which the communicating became formal and restricted, and the elements, laid upon the altar, were screened during the consecration by rich curtains drawn between the columns of the *ciborium*. The altar with its canopy thus grew into an edifice within the church; all the riches and all the ornamentation which the Church had at command were lav-

ished on it. The splendor of these tabernacles of the early churches outdid what modern churches have to show. Costly marbles and stones, pillars of silver, plates of gold and enamel studded with precious stones, vessels of gold and silver, silken curtains wrought with gold and needle-work and starred with jewels, lavish sculpture, mosaic, and painting, gave beauty to them. The historians of the Church are as fond as the modern *custode* of telling the number of pounds of silver or gold plate, or the weight of columns or statues that adorned the altars of this or that famous building. Thus the *Liber Pontificalis* records that Sixtus III. adorned the Confessio of St. Lawrence with columns of porphyry, and a grating of pure silver weighing fifty pounds; the silver railing above weighed three hundred pounds, the canopy over it with the statue of St. Lawrence, two hundred pounds. There were whole ciboriums made of beaten silver, as in Sta. Sofia at Constantinople by Justinian, in St. John Lateran by Sylvester, as that given by Honorius to San Pancrazio which weighed one hundred and eighty-seven pounds, and others. There still remains in the museum at Perugia a silver ciborium taken from the church of San Prospero, and the silver-gilt sculptured plates of the altars in San Ambrogio at Milan and St. Mark's at Venice are even now the wonder of travellers.

V

It has been a commonplace of German criticism to say that while Greek architecture was the architecture of the exterior, Gothic or Christian was that of the interior. Though the saying is only remotely true of Gothic, it is characteristic of the early Christian basilica, at least in the West. The old basilicas of Rome, so far as their original condition appears, are outwardly no more than barns. The classical temple was a monument, covering a splendid shrine; sacrifice and public worship were performed in front of it. The basilica was a hall of worship, the service and the congregation were within; its exterior, except where the inside decoration overflowed, as it were, retained a certain correspondence to the modest obscurity in which the Church began. We have seen how sumptuous its interior had become even before the time of Constantine, what lavish decoration was heaped upon its central feature, the altar with its ciborium. The interior of the ancient temple had been mostly dark, lighted only by such light as came through the open door, or by lamps.¹ The churches received a flood of light through their clerestories, and contemporary accounts of

¹ Whether we hold with those archæologists who believe in a hypæthrum, or with those who reject it, it is clear that the great majority of temples were without it.

churches show that this abundance of light was greatly valued, dimmed though it was by the screens of perforated or translucent marble with which the openings were filled, and for which even in very early days glass was often substituted. Artificial light was also abundantly provided. The altar and ciborium were set about with candlesticks and overhung by lamps;¹ and Venatius Fortunatus, the poetical bishop of Poitiers in the time of Gregory the Great, writes sonorously, Bright glowed the very priest amid the lamps:

Inter candelabros radiabat et ipse sacerdos.

The priest, as we know, in his resplendent vestments, stiff with embroidery of gold and shining with gems, was by no means the least radiant adornment of the church.

The pervading light was reinforced by the color and gilding which were generously distributed. The timber roofs of the great basilicas were, in many cases at least, screened off by horizontal ceilings of wood, and these were apt to be highly decorated. Of Constantine's basilica of the Holy Sepulchre, Eusebius says that the ceiling was in-

¹ The *Liber Pontificalis* mentions a great chandelier (*farum*) given by Hadrian I. to St. Peter's. It was in the form of a cross, hanging before the presbyterium, and held thirteen hundred and seventy candles: *Habentem candelas mille trecentas et septuaginta.*

tricately combined of carved panelling spread over the whole basilica like a great sea, and further, that it was everywhere overlaid with bright gold, so that the whole temple gleamed as if in a sea of light. The church which we now know as San Apollinare Nuovo in Ravenna, was originally called, from the splendor of its ceiling, San Martino in coelo aureo. But the characteristic thing in the decoration of these churches, the real contribution which the first Christian centuries made to the art of the world, was its mosaic. Mosaic decoration had been abundant in classic times and a great favorite of the Romans. There was the *opus sectile* or Alexandrine, of variously colored marbles cut to shape and fitted together in ornamental forms, used for pavements and continued for that use in Christian buildings. There was the finer mosaic of small tesserae of marbles and stones, used both for pavements and the covering of vaults and walls, and of which elaborate pictures were made, like the famous battle of Alexander, and decorative designs, simple or complicated. There was even a certain use of glass tesserae for small ornamental work; we see it in one or two objects, niches, and the like, preserved to us at Pompeii, and familiar to all travellers. The Christians took up this last kind, made of little account before, and rapidly, almost suddenly, developed out of it a great system of deco-

ration, for which there had been no real precedent, and has never been any substitute. They spread it in a vast incrustation over whole interiors. They peopled these interiors with saints and martyrs, with portraits of the Saviour, the evangelists, and apostles, and covered them with representations of all religious scenes, historic, legendary, and apocalyptic.

This change brought a complete revolution in the colored decoration of the churches. The polychrome of which the Romans were fond had been based on the natural colors of the earth. Their particolored marble mosaic of floors and walls, repeated in sculptures, busts, even statues, of mixed material gave a scale of color which was sober, neutral, though varied and of considerable range, easily harmonized in virtue of the quality of its tones. Ancient painted decoration, Egyptian, Greek, and Roman, had depended on the colors of earths and minerals, colors, like those of later frescos, which could be safely laid on plastered walls, and which the use of encaustic did not heighten into brilliancy. Even the splendid reds to which we are used in Pompeian mural painting did not carry the pitch of their coloring above sobriety. It was their highest note, a deep, powerful, still sober color, to which all the other tints subordinated themselves, in dull yellows, browns, grays, gray-blues, and dull greens, set off by much black, al-

ways keeping on the warm side of the scale, and inclining to neutral tones. But when the Christian decorators turned to artificial tesserae with glazed colors, their palette, as a painter might call it, was absolutely changed. The splendor of the vitrified pigments seems to have roused their desire for color into exuberant activity. Splendor of color had been the strong side of ancient glass, especially of Egyptian, as countless vessels and vases in our museums show, when all its manufactures were small in scale. Many early writers show that glass was used in church windows commonly, if not generally. Prudentius, writing about A.D. 400, compares the windows of the basilica of St. Paul to meadows shining with spring flowers. The possession of such brilliant materials inspired the painters to key up their decoration to the highest pitch, and spread it over the whole of their interiors. The tone was shifted to the other end of the scale of hues, and splendid harmonies of blue and green and gold set off with other colors took the place of the duller combinations of the Romans. The glazed tesserae gave that vibrating play of tone which has been the delight of all colorists, filling with life and vivacity tints that without it would have been monotonous. For such a rivalry of glowing colors gold was the only sufficient mediator, and the gilded tesserae were used with the greatest freedom. The power and harmony with

which those old decorators used their prodigious palettes astonishes us. The backgrounds which at first varied between deep blue and gold according to the treatment of the subjects which were put upon them, were afterward almost always of gold; the walls shone, the hollows of apses, niches, and vaults gleamed with its brilliant reflections. The decoration was naturally concentrated upon the apse, which was always domed, and the end of the nave next it, the triumphal arch and its neighborhood. The lower parts of the walls of the apses where they were liable to blows and abrasion, up to the level of the arcades, and sometimes the walls up to the vaults, were covered with marbles in panels, or Alexandrine mosaic. San Apollinare Nuovo at Ravenna, the cathedral of Parenzo, Sta. Sofia at Constantinople, and, later, St. Mark's of Venice, are conspicuous examples of this, as well as of the glory of the mosaics with which the domes, vaults, and upper walls were clothed. Where the more costly mosaic could not be provided, the walls and roof were covered with paintings, and these were apt to be carried through aisles and over piers, till even in the more unpretending churches the whole interiors were bright with color and pictured with all the legends the Church had to tell. The decoration overflowed in many cases to the outside. The blank walls of the exteriors were often covered with paintings, like

the interiors; the fronts of the most important basilicas at least had their adornment in mosaic. Exposure, violence, and repairing have naturally done away with most of this outside decoration, but enough remains to show what it has been. There are still conspicuous remnants of the old mosaics on the front of the cathedral of Parenzo, and we are told that the original basilicas of St. Peter and St. Paul were decorated in the same way. Probably it was common; Sta. Maria in Trastevere is so adorned with mosaics of the twelfth century. The continuation of the habit in later generations is seen on St. Mark's and on the cathedral of Orvieto. The superb color of the early mosaics holds its own in the face of all that has been done since. We admire them in the apses of Sta. Pudentiana and Sta. Prassede at Rome, in the old Baptistery and the great churches at Ravenna.

At first the subjects and treatment of the mosaics, like those of Christian sculpture, were hardly to be distinguished from the classic. The oldest Christian mosaics, in Sta. Costanza at Rome, are on a whitish ground like the old Roman, and wrought in light, festive, straggling designs of arabesques of vines, among which cupids, birds, and animals are playing; in the Orthodox Baptistery at Ravenna the style and the tone are still classic, but Christian scenes, ideas, and emblems

prevail; in the mausoleum of Galla Placidia, where the deep blue dome spangled with stars first shows that representation of the starry sky that decorators have ever since affected, we see the whole depth and fulness of color, and the full illustration of Christian faith. Henceforth all the stories of the mysteries of religion, of sacred history, miracle and martyrdom, came to be depicted in the churches, and the painting to be as important as the building.



SANTA MARIA MAGGIORE
Rear Façade



SANTA MARIA MAGGIORE

ONE August night about the year 355 or 360, so the legend of the church tells us, Liberius, bishop of Rome, known in later history as Pope Liberius, was visited in a dream by the Virgin Mary, who ordered him to build her a church upon a spot which he should discover in the morning marked by a covering of new-fallen snow. Early the next day messengers brought the wonderful news that fresh snow, fallen in the summer night, had covered a space on the summit of the Esquiline Hill. Presently a wealthy patrician, of whom we are only told that his name was John, and that he and his wife had wished to dedicate a church to the Virgin, came to announce to Liberius a vision like his own and his desire to carry out the Virgin's command. The Pope and the patrician went together to the place of the miracle and there in the surface of the snow marked out at once the plan of the basilica, which, in memory of its miraculous origin, came afterward to be called the church of St. Mary of the Snows—Santa Maria ad Nives. It was built under the authority of Liberius but at

the cost of John, "juxta Libiæ Macellum," hard by the meat market of Libia, as the historians say, on the site of the private basilica of one Sici-ninus, and so was called at first only the Basilica Sicinina. After the death of Liberius it was called the Basilica Liberiana, which is still its official title, for the story of the miracle and the name which is derived from it were not in common circulation till some centuries later. The church so founded, the earliest important church there dedicated to the Virgin, has been conspicuous in the history of Rome; it passed through many transformations and a variety of names before it became universally known as the church of Santa Maria Maggiore. No church in Rome, after the Lateran and St. Peter's, has held so large a share of public veneration, has been more honored by the Catholic Church herself, or so splendidly adorned and maintained to this day; perhaps none at all retains so much of the aspect of the great basilicas which saw the early triumph of the Roman Church.

It is true that it is not easy to say how much of the church of Liberius is to be seen in Sta. Maria Maggiore to-day, and we can more safely say that it still shows within, in its chief parts, the form which it had after its restoration by Sixtus III. eighty years later. We do not know how much he altered its main structure, perhaps not greatly, but we may believe that it was in need of restoration

when we consider what went on in Rome during the fourth and fifth centuries. No sooner, for instance, had Liberius died in 366 than it suffered in one of those bitter schisms which surprise the reverent inquirer into the early history of the Church.

The Athanasian controversy which had troubled the pontificate of Liberius was renewed in the struggle of Damasus and Ursinus for his vacant episcopal chair. This led to a factional fight so furious that the Prefect of the City, instead of quelling it, fled outside the walls; and when the election of Damasus was verified, his party attacked the followers of Ursinus, who were met for protest and defiance in the church of Liberius. They set fire to the doors of the church, climbed upon the roof, which they tore open, and hurled its tiles down upon the people within. At the end of the fight one hundred and thirty-seven of Ursinus's party lay dead upon the floor of the church. In the time of Sixtus III. it was the Nestorian controversy that divided the Church; and when that heresy was set at rest by the council of Ephesus, which declared the Virgin to be the mother of God—*Θεοτόκος*, *Deipara*—Sixtus, identifying himself with the prevailing doctrine, determined to signalize it by restoring the basilica, and dedicated it to *Sta. Maria Dei Genetrix*, the first, as I have said, and the greatest of the churches dedicated to her

in Rome. Among the four early basilicas this one is singular, the only one which has single aisles, the aisles being double in St. Peter's, St. Paul's, and the Lateran church. In this, no doubt, Sixtus preserved the early form of the church, and also in the round apse which closes the end of the nave, and in which the windows were cut some centuries later. Whether he found or added the small transept, which subsequent alterations have as it were obliterated by walling off the arms from the choir, it is not easy or very important to decide definitely. We may remember, however, that all the great Roman basilicas of the fourth and fifth centuries had transepts, unless it be San Lorenzo fuori le mura, which was also rebuilt by Sixtus, and whose original form is very much disguised by the changes it has gone through. I have before pointed out that in the early churches of Rome there was no intersection of nave and transept; but that the transept was a cross-wing against which the nave and aisle stopped as abruptly as against a dead wall, and was broken only by an apse set opposite the triumphal arch that opened into the nave, and occasionally by other apses opposite the aisles. The cruciform church of the Middle Ages, as we know, was developed pretty early in Lombard architecture, and in a sort in Byzantine, but the conservative Romans did not soon accept it. After the helpless syncope of art

in Rome in the tenth and eleventh centuries, they imported it from without, with the other forms of mediæval art, in the revival of the twelfth and thirteenth. The earlier or Roman form has, nevertheless, been known in ecclesiology as the *crux commissa*, meaning the T-shape, in distinction from the *crux immissa*, or genuine four-armed cross.

We may fairly suspect, from the analogy of the other important churches of the first centuries of Christendom, that Santa Maria Maggiore had before it from the beginning an atrium or open court surrounded by colonnades, with the usual fountain or basin for ablutions in the middle. The dimensions of the basilica were large. The nave, two hundred and thirty feet long by fifty-five in clear width, is as ample as the largest in the great mediæval cathedrals, though not so lofty, being only some sixty feet high. Whoever enters it to-day sees it essentially as Sixtus saw it. Its multitudinous marble columns, said to have been taken from the temple of Juno Lucina, carry, not the arches that we commonly look for, but a straight entablature whose lines, broken only once on each side by a modern arch, lead the eye away down to the great triumphal arch and round its imposts. The Ionic order is of classic proportion and detail, the entablature rather light, and the frieze decorated with arabesques in mosaic. Here for once we have

an interior of classic type which, loftiness apart, more than competes with the great Gothic interiors in effect of multiplicity and far-reaching perspective. The columns, much closer spaced than arcades would allow, seem countless; the long lines in the entablature, cornice, and coffered ceiling, and in the Alexandrine pavement, the very lowness of the nave, all help to give a marvellous impression of scale, distance, and majesty. The only dissonance in this harmony is the interruption of the entablature by the modern arches. But for that we should have here the one unexampled instance of a church interior purely classic in design, simple, continuous, thoroughly harmonious and, in spite of its monotony, unique in its impressiveness.

The deliberate retaining of the entablature in certain of the most important buildings of Christianized Rome at the time when the arch was elbowing it out of use throughout the rest of the world, is a singular sign of the conservatism of Rome. Even in the eastern empire, of which we are apt to think as the embodiment of conservatism, we find almost no traces of the use of the entablature after the time of Diocletian. But in those days the east was the progressive branch of the Empire and Rome the backward. The empire of the east, founded by barbarians, developed its polity, its society, and its arts with the freshness of a new state, and in the northern parts of

Italy the German conquerors, settling themselves among the Italians, gradually renewed the population, transformed its habits, and in time reformed the arts which their inroads had nearly destroyed. But Rome sat apart, uninfluenced by the new life that was stirring about her, her population unrenewed and gradually wasting under oppression, violence, pestilence, and famine. Only her hierarchy gained in authority and wealth, while everything else decayed about it. Again and again the floods of invasion threatened to overwhelm her; now and then they surged up to her gates and fell back. Four times her enemies burst in and pillaged her, stripping her of an incredible amount of accumulated wealth; yet they did not fasten upon her, but hastened away with their booty. The awe or reverence with which for ages she had inspired the outside world had twice turned back Alaric before he finally abased her; and, aided by the eloquence and venerable bearing of Leo the Great, had even held the arrogant and savage Attila at a distance. It would seem that something of this reverence returned upon her conquerors after the first impulse of their violence was spent, made them uneasy within their walls, and drove them to leave her to herself in her humiliation. So she lived in virtual isolation through the dark ages, as Mecca or as Jerusalem lives now. Pilgrims flocked to her, left their offerings and

went away. Her pontiffs gradually extended their spiritual authority throughout Christendom, rooted their temporal authority, and gathered wealth from all the world into her shrines. But little new blood came into her population : numbers, character, learning, and art declined among them, and like all decadent communities they held to their conservatism. Constantine had found a great body of Christians in Rome, mostly, it is true, among the lower classes ; and though his imperial promulgation of their religion made a great change in external observance, it was long before even the ancient worship was smothered in the city, longer before the upper classes ceased to be secretly devoted to their paganism, longer still before the Roman people radically changed their ways of thinking and feeling. For centuries their old superstitions clung to them ; their attachments to their old institutions, manners, arts, were perennial.

It would seem that the older and consecrated form of architecture was preferred by the early Roman Christians to the new ; the entablature was more in honor than the arch. It is likely that when they first lined their naves with arcades instead of colonnades, economy and ease of construction were their determining motives. Their mechanical skill had already deteriorated and it was easier to turn plain arches than to cut entablatures. When they

had an excuse to plunder a heathen building they could supply themselves not only with columns, but with the rest of the order, and repeated edicts of the later emperors, and even of the Goth Theodoric, for the rescue of the old buildings from destruction, show that the reverence of the people for the ancient monuments did not keep pace with their attachment to the ancient forms. It would appear, too, that Constantine and his bishops set the example of destroying the old for the building of the new, for there are few early churches in which the conspicuous parts are not built out of old materials. But the opportunities for the despoiling of old buildings were not unlimited, and while columns could be stolen from distant towns, it was not so easy to bring whole orders. Columns were indispensable, but architraves and cornices were not. So while it is apparent that the greater honor attached in Rome—and in Rome only—to the ancient form, we find the use divided between that and the arch. In the old basilica of St. Peter's, pulled down at the beginning of the sixteenth century by Bramante to make way for the modern church, and in the round church of San Stefano, the nave was lined with great colonnades bearing entablatures, while the double aisles were separated by smaller columns with arcades. The contemporary basilicas of St. John Lateran and St. Paul's outside the walls were arcaded throughout; our

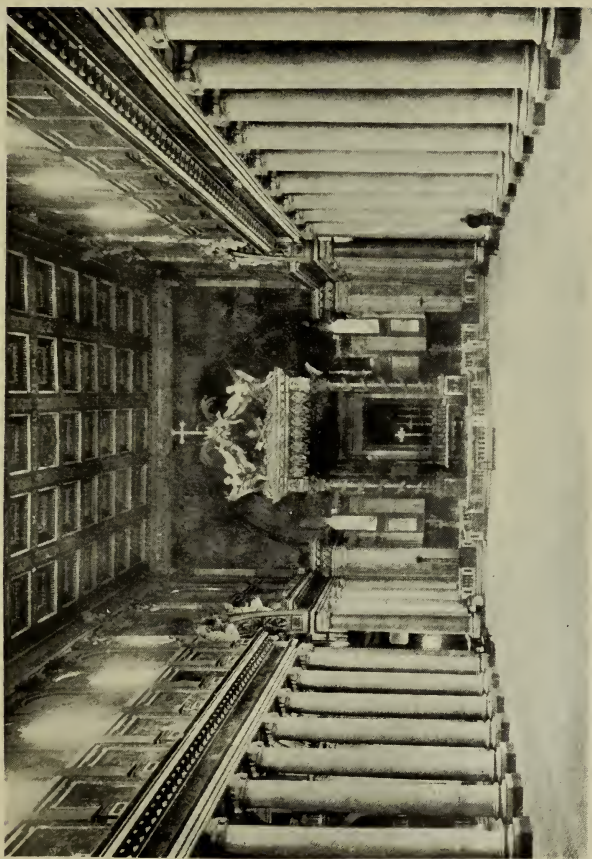
Sicinian or Liberian basilica showed the entablature; so did somewhat later the churches of San Lorenzo without the walls, Sta. Maria in Trastevere, San Crisogono, San Martino ai Monti, and Sta. Prassede, while in the lesser churches the arcade was usual.

Above the order the walls of the nave have lost something of their old and probably plainer aspect, each alternate clerestory window being filled up and replaced by a modern painting, while an order of Corinthian pilasters set between them repeats and continues the lines of the columns below. But the square panelled ceiling, with deep coffers and carved and gilded beams, although added at the beginning of the sixteenth century, doubtless renews very much the effect of the original one, while the upper order with its cornice and frieze is at least harmonious with the effect of the lower part.

The most characteristic adornment is still the series of mosaic pictures in square panels not much spoiled by later restorations with which Sixtus filled the space between the lower order and the clerestory, leading up to the great group of mosaics that surrounds the triumphal arch. These show how early a consistent scheme of iconography was arranged for the decoration of the church. The mosaics on the walls of the nave represent in the main a series of scenes from Old Testament

SANTA MARIA MAGGIORE
Interior





history, the prophecies and forerunners of Christ. Those about the arch show the story of his birth and infancy—the Annunciation, the Presentation, the Adoration of the Magi, the Massacre of the Innocents. They are among the most interesting in Rome, as they are among the earliest. Late classic in style, they yet have a freedom of drawing and invention and a skill in execution which were lacking in the mosaics of the following centuries. Over the arch is the simple inscription “Sixtus Episcopus Plebi Dei.” The ambones which stood on each side of the nave near the choir, and the two ciboria that flanked the entrance to the choir are gone; the baldacchino that stands in front of the arch of triumph is modern; a modern tomb on each side of the entrance closes the first intercolumniation of the nave, yet the interior is singularly harmonious. The warm tones of the marble columns, tinged by age and by the smoke of innumerable censers, the marble pavement, the rich coloring of the mosaics and paintings, with the quiet tints of the architectural members, enriched here and there with gilding, the whole roofed by the gilded beams and gray panels of the ceiling, add a sober splendor to the dignity of the architecture.

The gifts which Sixtus III. added to his church illustrate one of the singular phenomena of Roman history—how, even after the pillage of the Goths,

and while the decline and depletion of the city were steadily going on, the Church kept on accumulating wealth, repairing her losses. Her population was wasted with want, and sometimes at starvation's door, but her shrines were adorned with a luxury which sounds fabulous to us. We are told that Sixtus furnished the altar of Sta. Maria with a *scypus* or chalice of gold which weighed fifty pounds, and overlaid it with three hundred pounds of silver plates; a silver stag spouted water into the font, or the basin for ablutions: his various gifts to the furniture of the altar, says the *Liber Pontificalis*, amounted to more than six hundred pounds of silver. At the same time the Emperor Valentinian gave to St. Peter's a golden relief representing Christ and the twelve apostles, and to St. John Lateran a silver tabernacle. Perhaps it is not strange that one barbarian sacking of Rome was followed by another, that if the Arian Goths had respected the orthodox shrines, the Vandals should have spared none, but loaded themselves alike with the gilded tiles of the temple of Jupiter, the spoils from the temple of Jerusalem, and the furniture of the Christian shrines, or that St. Jerome should declaim against the luxuriousness of the churches and their services in his day.

It is only in the nave that the original character of the basilica is preserved. The tunnel-vaulted

aisles, faced with Ionic pilasters, and the groups of chapels that lined them, are Renaissance; the main apse or tribune, with its pointed windows and mosaic, speaks chiefly of the short period when the Gothic fashion prevailed at Rome. But it is seven hundred years after the time of Sixtus III. that we next find a definite account of important changes in the church, though meanwhile the bell-tower was built on the right of the main entrance, where, added to in the thirteenth century and again in the time of the Renaissance, it now lifts its four variously arcaded upper stories and its pointed roof over the main façade—the highest tower in Rome.

Eugene III. found time during his troubled pontificate, from 1145 to 1153, in spite of his struggles with his republican rebels, to restore Sta. Maria Maggiore and considerably modify it. He built a new front with an open portico resting on eight coupled columns of granite. The Romans, with that fondness for past ways which I have just discussed, reverted again during the later Romanesque period to the classic entablature. It is certain at least that the porches added to churches—San Giorgio in Velabro and San Lorenzo fuori le mura and some others—are built with an entablature in classic form instead of the arcades which were elsewhere universal during that period. It is probable that none of these

porches is older than the twelfth century. It is also true that but for some bell-towers of Lombard aspect and some one or two old arcaded cloisters, and the later apse of one church, there would hardly be any evidence that the Lombard Romanesque, which took possession of the north of Italy, ever found its way into Rome. An old print cited by Letarouilly shows that the portico of Eugene, like the porches I have just mentioned, had an entablature and not an arcade. A more extraordinary thing, which does show the influence of the contemporary style upon the revival or continuation of the old one, is the coupling of the columns in a colonnade, a thing unknown in ancient art, hardly to be found in the Renaissance, and looked upon as an innovation when it was introduced by Perrault in 1665 in his famous colonnade of the Louvre.

In truth, during the period of most rapid development of Romanesque architecture, the eleventh century and most of the twelfth, Rome, impoverished, unpeopled, and entirely given up to the evolution of her church, did almost no building of which we have record. If we may believe the writers of a somewhat later time, she had sunk to the lowest impotence in literature and art. It is likely that being provided with churches to suit the larger population of earlier days, she had no occasion to build them, and there is abundant

evidence that many of those she had were allowed to fall to dilapidation, and were from time to time rudely and hastily restored only to keep them from tumbling to pieces; or the favorite church of some dignitary was enriched by a small addition, or adorned with mosaics or a new shrine. But this was all. Such conditions favored, not progress, but conservatism and even retrogression. The porticos which I have mentioned and which are the characteristic monuments, perhaps the only ones, of Roman architecture at this period, are altogether classic in general form, and might easily have been believed by their builders irreproachably so in all respects. Yet they show on examination that they could not have been executed at a date much earlier than that which history assigns them. The ratio of the columns to their load, the proportions, and in some degree the form of the details, betray the influence, very likely then unrecognized, of the work that went on outside of Rome. They give evidence of a sort of revival in the twelfth century, whose rude beginning shows into what decadence the Roman architecture had fallen, but which advanced both in design and in mechanical skill, leading up to the finished work of the Cosmati, and culminating in the cloisters of St. John Lateran and of St. Paul's, or outside of Rome in the porch of the cathedral at Civita Castellana.

At the end of the next century, about 1290, Nicholas IV. rebuilt, or at least redecorated, the apse of Sta. Maria Maggiore. By this time the Gothic wave had overflowed Italy, and even Rome yielded so far as to admit the pointed arch. Pointed windows were cut in the apse, which are still to be recognized on the inside, and it was covered or re-covered with mosaics. These had been a specialty of Rome ever since they were invented, and pictorial mosaic had been carefully fostered by the Church. It had sunk with the other arts in the ninth and tenth centuries and risen with them in the twelfth. Nicholas marked his short reign by the mosaics with which he lined the apses of the Lateran and Liberian basilicas, the finest works of their day. Both were the signed work of one artist, Jacobus Torriti, a Franciscan monk, of whom only these works are known, but who is not to be confounded with the painter of the same name to whom are due the earlier mosaics of the baptistery at Florence. We may guess him to have been his kinsman. The central composition here represents, in due sequence with the older mosaics of the nave and the triumphal arch, the crowning conception of the cult of the Virgin—the *Incoronata*. Colossal figures of Christ and the Virgin occupy a great disc on the back of the dome. They are seated together on a throne, his hand still raised to the crown

which he has just set upon her head, and are divided by a border of stars from the rest of the composition. About them crowd ranks of angels, behind whom modestly kneel on either side Nicholas and Cardinal Colonna, who shared the cost of the decoration with him, overtopped by the towering figures of the patron saints of Rome, and of the two Johns, the Baptist and the Evangelist, and behind these again the newly canonized saints, Francis of Assisi and Anthony of Padua. Beneath is the inscription, more or less abbreviated :

MARIA VIRGO ASSUMPTA EST AD ETHERIUM
THALAMUM IN QUO REX REGUM STELLATO
SEDIT SOLIO

and below, this :

EXALTATA EST SANCTA DEI GENETRIX SUPER
CHOROS ANGELORUM AD COELESTIA REGNA.

The mosaic is remarkable for various reasons. It marks, as I have said, the culmination of homage to the Virgin, and is perhaps the earliest representation of this conception that exists. It is interesting to compare it with the corresponding mosaic, a century and a half older, in the dome of the apse of the other great early basilica dedicated to the Virgin—Sta. Maria in Trastevere. There again Christ and his mother are enthroned side by side; but the son sits with his arm about her shoulder, and with no emphasis of the crown, as

if the enthronement were the event portrayed, and the crown simply a part of the costume supplied by the painter. The mosaic of Sta. Maria Maggiore shows the advance in design and execution due to the interval. From these figures the classic attitudes have entirely disappeared, though something of classic breadth still lingers in the draperies, but the upper part of the conch or dome is occupied by arabesques on a large scale singularly classic in design. It is easy to conjecture that the enormous acanthus leaves from which they spring, and the dense reversing coils of heavy foliage, in which figures of birds are enveloped, are parts of the older decoration of the apse preserved from the fourth or fifth century, while the borders of the dome and of the pointed windows, though still composed of classic motives, are distinctly mediæval in scale and treatment.

Of like character with the mosaics of the apse, and almost the same date, are those which were added at the end of the thirteenth century to the old front above the portico and fortunately preserved when the front was remodelled and the present loggia built over them. They represent in a broad upper band great figures of Christ enthroned with the Virgin and saints on each side, and below these four characteristic scenes, framed in Italian Gothic architecture of the thirteenth century, telling with great animation the story of the founda-

tion of the church—the vision of Liberius and that of John the patrician, the reception of John by the pope, and their identification of the site, under an abundant but circumscribed snow-storm sent down by Christ and the Virgin enclosed in an aureole above. The upper band of mosaics is signed by Filippo Rusuti, of whom again only this work is known; the lower ones are attributed by Vasari to Gaddo Gaddi, who also, it is said, added a range of small mosaics below those of the conch of the apse. These are all contributions by the cardinals Jacopo and Pietro Colonna, of a family which cherished this church and much adorned it in later days.

These are the last considerable changes in the church itself of which we have record until the days of the Renaissance. Within a dozen years—in 1309—began the Babylonian exile, as it has been called, of the popes to Avignon under Clement V. Seventy years later when Gregory XI. brought back the papacy to Rome, he rebuilt or built up the bell-tower of which I have spoken, and the upper stories which he added, with round arched arcades above pointed ones, may count as a symbol of the brevity and instability of Gothic influence upon the architecture of Rome. The great churches of Rome seem to have fallen into neglect and dilapidation during the exile, and to have but slowly recovered. It is a curious coinci-

dence that the three popes who since the establishment of the Church by Constantine have at long intervals borne the name of Sixtus are all associated with this basilica. The next we hear of it is that a hundred years after Gregory XI., the magnificent Sixtus IV. of unsavory history, builder of the Ponte San Sisto and the famous Sistine Chapel of the Vatican, adorned the church with splendid furnishings, of which perhaps the only remains are the four columns of porphyry that to-day support the modern baldacchino over the high altar. He added, through his French cardinal D'Estouteville, arch-priest of the church, a chapel which was probably among several that have been swept away to make room for later and more splendid additions.

At the end of the fifteenth century, while Columbus was discovering America, Alexander VI.—the second and last pope of the Borgia family and father of that precious pair, Cæsar and Lucrezia—made Giuliano Sangallo replace the ceiling of the nave with that which we have described. History is full of unexpected juxtapositions, and one of these surprises us when we are told that the first gold brought from the New World, given to the church by Ferdinand and Isabella, is spread over the gilt beams of this ceiling. Sixty years later Michelangelo began, for Cardinal Guido Ascanio Sforza, the chapel on the right of the nave, still

known as the Sforza chapel. He and the cardinal died in the same year, 1564, and the chapel was carried out for Cardinal Alexander, brother of the first, by Giacomo della Porta. The design of the chapel was modified, it is said, in the after execution, but the singular and extravagant plan is probably due to Michelangelo, whose unruly genius tended, in architecture, to the far-fetched and the bizarre. It had an enriched façade toward the nave, but this was taken down, probably with advantage to the nave, in the later restoration under Benedict XIV.

Of the other chapels that line the aisles two are of special importance—the *Capella del Presepe* and the Borghese chapel, the chapels of Sixtus V. and Paul V. These twin chapels stand on opposite sides of the nave, and though to the vast basilica they are but side chapels, they are on a scale that would do for churches in these degenerate days of scattered worship. They are Greek crosses in plan, measuring some seventy-five feet each way in size, the centres covered with domes of about forty feet span. They are about sixty-five feet high to the crown of the vaults which cover the arms, one hundred and thirty feet to the top of the domes inside, and one hundred and sixty feet to the summit of the lanterns without. Though built twenty-five years apart, and by different architects, they are alike in design, with some differences of

detail. A great order of Corinthian pilasters, half as high again as the main order of the nave, surrounds each of them within, carrying the vaults that cover the arms of the cross, and the pendentives which bear the domes. It was to give importance to the approach to these chapels that the colonnades each side the nave were broken, the entablatures interrupted, and two columns on each side spread apart and set close against their neighbors¹ so as to open two broad arches rising to the level of the clerestory window-sills. This is, as I have said, the only serious injury done to the original design of the nave; and it is serious, for it is to the grand lines of the entablatures, continued even round the imposts of the triumphal arch, and to its serried ranks of columns, that the nave owes its majesty. These are broken with an abruptness that shocks the eye, and by arches which yet look insignificant beside the triumphal arch.

The two chapels are finished inside with an amazing sumptuousness of varied marbles, sculpture, gilding, and painting; their design and proportion are elegant. The earlier one, the Sixtine, was begun by Domenico Fontana for Sixtus V., when he was Cardinal Montalto, and wished a shrine of great splendor to receive the manger of Christ. This had been brought from Palestine

¹ Literally, richer columns of gray granite have been substituted for the pairs that were thus displaced.

with the remains of St. Jerome by Theodore I., when he came from Jerusalem to St. Peter's chair, and had been preserved in one of the older chapels. The lavishness of this undertaking cost the cardinal his allowance from the papal revenues; for the pope, Gregory XIII., declared that a cardinal who could venture on such an undertaking must be rich already. The work would have been stopped, says Milizia, if the architect had not devoted his own savings to keep it going. Fontana had his reward when the cardinal became Pope Sixtus, being appointed with Della Porta to carry on Michelangelo's design for St. Peter's, and he speedily finished the chapel in Sta. Maria Maggiore, with even more splendor than he at first intended.

The five boards of which the manger consisted are deposited below the pavement in the middle of the chapel of Sixtus, under a magnificent shrine. The little chapel in which they had been preserved was some twenty yards away from their present position, and Sixtus, as solicitous for the traditions of the Church as he was imperious, insisted that the old chapel should be moved bodily with the precious relic in it to its new place. His faith in Fontana's engineering ability had been fixed by the skilful placing of the obelisk in front of St. Peter's; and the little building, with its walls and vaults laboriously braced, crated in a great frame

of timber, and slung by a complicated system of ropes, was moved to its position and lowered to its new level. Above it is set a resplendent tabernacle of gilded bronze, and facing it on each side are the sumptuous monuments of Sixtus himself and of his sainted predecessor, Pius V.

The second of the two chapels was built twenty-five years later for Paul V. by Flaminio Ponzio. It is even more splendid than the chapel of Sixtus which it copies, and more refined in its architectural detail. It, too, has its venerated relic, enshrined under a magnificent canopy over its altar—the sacred picture of the Virgin painted by St. Luke, the same which was carried in the solemn penitential procession to St. Peter's by Gregory the Great when pestilence was desolating Rome. When Paul had finished his chapel the picture was again carried in procession, and was fixed here in its frame of amethyst, guarded by gilded angels under a canopy of lapis-lazuli and jasper.

Closely as the two chapels agree in their design, there is one difference which has, I think, a special significance. The dome of Ponzio's chapel is the ordinary hemispherical dome of the Renaissance; Fontana's is lifted into an ellipsoid. Now Michelangelo's dome designed for St. Peter's was a hemisphere, and we know that Della Porta and Fontana got permission from Sixtus, who insisted that in every other respect Michelangelo's design

should be carried out to the letter, to change the outline of the dome and make it higher. The dome of Fontana's chapel is a pigmy compared with that of St. Peter's; its outline is not so fine, but it is an embodiment of the same idea, an idea which no one before Fontana seems to have had. St. Peter's dome was built in 1588-90, just after this chapel; and it would seem that here was embodied the first conception of that soaring outline which, more than its size, makes the distinction of St. Peter's dome above all other domes of the Renaissance.

Our history of the old church of Sta. Maria Maggiore may end here. The changes that since this have taken place in the interior, where alone the old church can be seen, are of little moment. The important changes are in the exterior, or rather in the architectural case that has been built about the exterior. At the time that he built his chapel, Fontana had, by order of Sixtus, set up in the open place behind the apse of the church an obelisk which had long lain neglected near the Mausoleum of Augustus. The task was in some ways more difficult than the handling of the obelisk before St. Peter's, for this one was broken in pieces and had to be cunningly mended before it could be slung. At the same time he opened the long street that under the triple name of the Via

Sistina, Via Felice, and Via dei Quattro Fontane connects the basilica with the Trinità dei Monti and the Spanish Steps. In like manner Paul V., the year after he had finished his chapel, set up before the front of the basilica the great Corinthian column, sixty feet high between its lofty pedestal and its block of entablature, the last plunder of the Basilica of Maxentius or Constantine, and crowned it with the bronze statue of the Virgin which we still see there. But Fontana and Ponzio would hardly recognize the venerable basilica which they left to be guarded by these two sentinels in the massive building which now stands there, with two modern façades facing the long streets that lead away from it a mile in each direction. The old basilica is buried in a pile of buildings occupied by the canons and other officials that serve it, and from most points of view has much more the aspect of an enormous palace than of a church. The rear front, facing down the slope of the Esquiline Hill toward the Trinità dei Monti, was built for Clement X. (1670-76) by Carlo Rainaldi, and follows more or less the lines of a design left for it by Ponzio. It is by far the finest part of the exterior; standing well at the summit of the slope, with its simple masses and long lines, and approached by an imposing flight of steps, it is dignified and harmonious. The rear of the basilica forms the central mass, and the

apse projects from the middle, showing in the intercolumniations the windows of Nicholas transformed by round arches. One great order of Corinthian pilasters covers more than half the height of the whole front; the second stage is too high in the middle for a windowless attic, but in the wings suits the windows of the second-story apartments. The twin domes of the Sixtine and Pauline chapels rising above the wings make an effective, though divided, composition. The warm-toned travertine of which the whole outside is built adds a charm to the architecture, and from a sufficient distance the mediæval bell-tower helps to unite the otherwise disunited domes.

The main entrance-front, built for Benedict XIV. in the middle of the eighteenth century by Ferdinando Fuga, is much inferior. It is in fact a many-windowed palace with a commonplace and unrelated Italian church front protruding from the middle. The cornice is at a uniform level, but the palace is in five stories and the church in two. There is some elegance of proportion in the two orders, Ionic and Corinthian, that cover these two stories, colonnaded below, arcaded above; but the flimsy detail, the multiplied breaks in the entablatures and pediments, and the uneasy statues that crown the balustrade, are in poor contrast to the dignity of the other façade, and the centre swears, as French critics would say, at the wings. The

venerable bell-tower lifts itself with a fine alertness above the cornice, but stands *dépaysée* among its surroundings. We owe thanks to Fuga, that while he displaced the portico of Eugene III. and used its columns for his own porch, he preserved the old front above it. The open loggia which he provided in the second story for the papal benediction at once protects and displays the historic mosaics of Rusuti which I have described.

Benedict did much to restore and adorn the interior. He renewed the pavement, inserted the responding pilasters of marble which bring the aisles into harmony with the nave, refreshed the paintings and mosaic, and added the baldacchino, with columns of porphyry and canopy of gilt bronze, which stands over the high altar. As he left the church, we see it still. The only change in recent days has been the rebuilding of the *confessio* beneath the high altar by Vespignani for Pius IX., who intended this for his own burial-place, but whose body lies elsewhere.

L'art a de la peine à se soustraire au paganisme, says Letarouilly: in Rome at least, where Letarouilly wrote it, this is true. Sta. Maria Maggiore is an epitome of the architectural history of Christian Rome, and may serve to illustrate how little there is or ever was in Rome of architecture distinctively Christian, or of any architecture not essentially classic. The earliest parts of the church that re-

main, whether they are from the time of Liberius or of Sixtus III., are as classic as the Arch of Constantine. The arch emancipated from the entablature, which is the only unclassic feature that ever naturalized itself in Rome, has found no place here.

The Lombard style, scarcely known in this city, as we have seen, except by its campanili, is represented in due proportion by the half-concealed bell-tower. The great Gothic movement, which changed the face of northern Europe, but has hardly left any mark in Rome, is here but just betrayed by the windows of the apse and tower. The art that lifted its head in Rome after the collapse of the ninth and tenth centuries turned instinctively to classic forms, as we have seen in the vanished porch of Eugene III. The Renaissance, born in Florence, found in Rome its readiest welcome and natural home. It developed here its most classic aspect, its greatest sumptuousness. The decorative arts through all these many centuries hardly strayed away, it would appear, from classic types. Even in the churchly rites of Rome and her popular beliefs, in the superstitions of her people, in the very days of her festivals, her cult of saints, the forms of her religious observances, the classical substratum shows through at every turn. To all these things the Liberian basilica, in its architectural forms, in its pictured decorations, and in its magnificence, is a witness.

ROMANESQUE ARCHITECTURE

I

IT is easy to forget, on the one hand, how distinctively architecture is a thing of race, or, on the other, how wide has been the controlling influence of the races that have given birth to styles. The whole of classic architecture, I have tried to show in another essay, was the creation of the Greeks. Early Christian or Latin architecture, a transitional phase, seems to have been a mixed product of mixed influences, in which Greek skill and barbarian enterprise in the east and Italian conservatism in the west all had a share. After the first Christian centuries there was a division of styles as of empire. That singular combination of Greek, oriental, and northern elements which made the Eastern Empire, made also the Byzantine style. In due time grew up under the hands of the Teutonic races that central stock of so-called Lombard architecture which was really the common Romanesque of Germany itself and of those parts of Italy that were given up to German influence, and



CATHEDRAL—SPEYER
Romanesque Towers



of which the architectures of England and France were variants. Somewhat later there germinated separately in Tuscany, where Italian character remained ascendant, but with a large infiltration of Teutonic energy and imagination, the little style which we call the Tuscan Romanesque. It was really the fulfilling of the Early Christian, worked out not pictorially, as a skeleton of walls and roof wrapped within with a garment of painting and mosaic, like the basilicas of Rome and Ravenna, but architecturally, with a rich and delicate detail incorporated into its substance, both within and without, of sculpture and colored marbles. Its culmination was the cathedral of Pisa. It had not the grandeur, the flexibility and variety, the constructive shape, or the luxuriant imagination of the Lombard Romanesque, but it was complete within its limits, wrought out with rare refinement, and in a perfection that foreshadowed that of the Renaissance, to which in the course of time it led. That the peculiarities of this singularly isolated style were due to qualities of race it is hard to doubt. The evidence of the obscure early history of Tuscany does not clearly show what was the dominant blood in its people, or what was the race whose peculiar instinct came to the surface in Tuscan art in the Middle Ages. It could hardly be the Roman race; the Romans, we have seen before, were not artistic. It could

not be Teutonic, for Tuscany was that part of northern Italy into which the northern blood was most scantily injected, and which was sharply dissociated from northern art. What is left but the Etruscan—the mysterious race which furnished the Romans with their early art, whose history is mostly hidden from us? But the question is too difficult for discussion here.

II

There is no doubt that we owe Romanesque architecture to the German race. The Latin basilican style of Constantine's time extended apparently over the whole of western Christendom, and was by no means the narrow or short-lived style that we might be tempted to believe it. It is true that scarcely any basilicas are left to us outside of Italy, few outside of Rome and Ravenna, and none in Gaul and Spain, where, as we read, many were built in the centuries that followed the conversion of the Empire; yet all the evidence shows that the Latin type remained without considerable modification through the long period while the Gothic, the Lombard, and the Merovingian kingdoms, and the new empire of Charlemagne, were forming and crumbling away. The fragments of early Christian building that are still to be found scattered over France and Germany, the

testimony of contemporaneous writers so far as it indicates anything clearly, show that even down to the ninth century the form of the churches was still essentially the same everywhere. By that time the whole of Europe had been Teutonised; only the south of Italy and a fringe of its coast territory, and in less degree the southern part of Gaul, had retained their population and their characteristics comparatively unimpaired. But the Germans, and the peoples among whom they were the controlling element, like those of northern Italy, when they came to have leisure and inclination for building, began with such buildings as their predecessors had built. Theodoric and Charlemagne, the greatest figures in history between the Empire and the Renaissance, aimed directly to continue and restore Roman civilization. Even the Lombards, although their name has stuck to the style that followed them, evidently attempted no serious innovations. It was sufficient for the restorers of architecture at first to try to recover the skill and replace the buildings that had been lost in the devastations of three centuries, and their early attempts were impotent enough. The belief which was common a few years ago, that the style which we call Lombard was the product of the Lombard kingdom, and that we see the work of that kingdom in the oldest churches of Milan and Pavia, has not stood against recent investigation.

I speak of churches, for mediæval architecture was church architecture; its progress was made, its important forms were developed in the building of churches; and the type with which I am occupied here is that great central type, the cruciform church, which embodied the building effort of the Middle Ages, whose development took a thousand years, growing out of the basilica of the fourth century, and into the cathedral of the thirteenth and fourteenth.

The Middle Ages have been said to begin with the breaking up of Charlemagne's empire in the ninth century. It was not till then that European society, delivered from the strain of overwhelming invasion and the dominion of individual will, began to crystallize into its own forms. Then followed the prevalence of the feudal system in the state, and in the Church the analogous hierarchy of the monastic orders, in whose hands architecture advanced and expanded enormously. It is possible that students of monastic architecture have exaggerated the influence of the monks in church building, yet it is certain that the eleventh and twelfth centuries, in which the great building order, the Benedictine, was most exemplary and powerful in the Church and the world, were those of the greatest development of architecture. It is certain that these orders maintained their own schools of arts and letters, and that north of the

Alps, where they were in greatest force, they were not only the leaders but the chief possessors of both literature and art; and that architecture, being the dominant art, took up the most of their interest and activity. It is not so easy to prove that the amount of building that was done in the north was greater and its progress faster than in the south, where it was more the work of secular artisans. The witness of the buildings themselves is not so decisive as we could wish, for those of the early ages of growth are mostly displaced by later, and the questions of chronological sequence in these dim centuries are difficult. In the fifth and sixth centuries, before the prevalence of the monastic orders, building was in the hands of the bishops; and there being no workmen among the invaders, the north gathered them from the south, and they worked in the southern fashion. The clergy themselves, indeed, who were the movers and inspirers of architecture, were up to this time all Roman. Even Charlemagne's building was, as he at least believed, only a continuation of the traditions of the Roman empire. The invasions of the ninth century undid most of the work of the three or four previous centuries. The Northmen in the north of France and the Rhinelands, the Huns farther east, the Saracens in Italy, ravaged, plundered, and burned. As Quicherat says, it was a universal bonfire that the Normans made of the

churches raised at so great cost by the Frankish emperors. Decade after decade the marauders returned, churches and convents went down wherever they passed, till the lands were stripped of their architecture and the inhabitants left with little heart or hope for rebuilding. But these invasions did not change the population like those of the fifth century, except where the Northmen settled, and founded the duchy of Normandy. When the flood subsided, the people began where they had left off, and the rebuilding went on slowly at first in the old way.

The north of Europe had been full of monastic settlements even before this. The south of Gaul and the Rhinelands had been well sprinkled with Roman towns; but northern Gaul and Germany were wildernesses up to the end of the Empire, and there were scarcely any German cities before the ninth century. The German races abhorred town life, scorned walls, and poured contempt on those who dwelt behind them. While Roman Gaul and Italy were civic countries, in which power, initiative, and example belonged to the cities, the northern lands were purely rustic lands, in which, as Villari says,¹ the hamlet, not the city,

¹ Villari's remark is interesting: It is certain that the Roman empire was an aggregate of municipalities, which administered themselves. The city was the primitive molecule, the cell, if we may so speak, of the great Roman community, which began

was the unit. The key to the settlement of Germany had been its conversion to Christianity in the eighth century by the missionary monks, chiefly by Winfried or Boniface, that great West-Saxon monk from England who, made archbishop of Mainz in spite of himself, reverted again and again to his missionary work, going back and forth among the unconverted Saxons of Germany, and finally perishing in the midst of the savage heathen by the far-off shore of the North Sea. There is an interesting story, too long to tell here, of how he and his pupil, Sturm, founded the famous convent of Fulda, on a site which the venturesome Sturm chose in solitary exploration through the heart of the Buchonian forest. There Boniface began the Church of the Saviour which Sturm finished, and which after a thousand years of various history was extinguished in the modern cathedral. To it, after his death, the body of Boniface was tenderly borne in procession, from city to city, through hundreds of miles of that wilderness which he had labored to Christianize. Wherever his coffin rested by night or day crosses were set, and a line of convents grew up at the stations to mark its progress for later times. These were the

to fall to pieces when there came a lack at the capital of the centripetal force which was needed to hold together so great a number of cities, separated by enormous country districts deserted, or populated only by the slaves that cultivated them.

men, and this the spirit that converted Germany from a wilderness full of savage wanderers to a settled and civilized country. This was the ardor with which the wild men of the north, who had brought ruin into Europe, turned from war to spread the Christian religion when the time was come. Germany was filled with monasteries, which became each a centre of civilization, a teacher first of husbandry and then of art and literature, providing perforce in its early isolation all the means and occupations of life as well as the services of religion for the community which gathered about it, and increased with every year.

The first need of the monks was for buildings. Almost before shelter worship was provided for. The record is that artisans were at first imported from the older settled countries, that in due time, as the building increased more and more with the spreading and population of the monasteries and the settlements about them, the workmen gathered in great companies, and regular schools or unions were founded. The disastrous ninth century appears, as I have said, to have more than checked the progress of building, while it apparently much increased the influx of people to the convents. For invasions from without had brought disorders at home, and the social order was so loosened that whoever longed for peace looked for it naturally in the cloister, bringing his property

as an offering for protection in this world and the next. Under the accumulation of wealth which this brought to the convents in the richer parts of Europe, especially in the south, the great Benedictine order which governed the most of them grew luxurious and brought much scandal upon the Church. Disorder and disrepute so increased in France that various efforts at reform were made, culminating in 920 with the establishment of the famous monastery of Cluny, which gradually acquired almost supreme control of the Benedictines in France. It became the mother of hundreds of monasteries, and the founder of a great school of building from which grew in the next century thousands of churches. In time the Clunisian monks also sank into luxury and sloth, and the second reformed branch of the order, the Cistercian, succeeded in the twelfth century to their influence and their building energy.

Thus it is safe to say that in northern Europe up to the time when in the twelfth century the towns began to grow independent, and then rich and powerful, the greater part of the building was done by the Benedictines; and architecture, which three centuries before had been in the hands chiefly of the bishops, had passed into theirs. When the long disorders of the ninth century and the slow attempts at recovery in the tenth had passed, and with the growth of the feudal system

a kind of order had established itself through Europe, there followed an outburst of enthusiasm in building which, looked at from the present, seems amazing. French writers make much of the depressing influence of the year one thousand, and the expectation of the end of the world which filled Christendom with uneasiness and deadened every impulse of progress. It seems evident that at least in the south—in France, and perhaps in Italy—this had much effect and put a check for the moment on the progress of building, though there is record of many churches going on in the north in the last decade of the tenth century. At all events the growth in the eleventh was sudden and general. Ralph the Bald, the monkish historian of Cluny, writes thus of what he saw: “Towards the third year after the year one thousand the sacred basilicas were rebuilt from foundation to roof throughout almost the whole universe, especially in Italy and Gaul. Christian people seemed to vie with each other in building the fairest and richest churches; one would have said that the whole world with one accord had put off its old worn garment to clothe itself anew with churches, as with a white robe. It was not enough for the faithful to rebuild the churches of the bishops, they restored and adorned the monasteries that were dedicated to the saints, and even the village chapels.” A passion for building

seems to have infected Christendom. It is to be remembered that the regular clergy, that is, the monastic clergy, was at this time the popular branch of the Church, recruited mainly from the poorer classes of the people—although its dignitaries were apt to be of higher position—and the most democratic in organization; that within the cloister worldly dignities vanished, or at least were reduced to less importance than elsewhere. Yet the feudal system which pervaded the whole social fabric north of the Alps had its effect on the clergy and in the convents. The sees and convents came to be endowed with great domains which the pious or the penitent had conferred on them; their bishops, abbots, or priors held them in fief and received feudal service for them. We are told that in the twelfth century a fifth of all the lands of France and England belonged to the Church, and of Germany a third. Thus they held control of the service of large numbers of people by civil tenure as well as by religious organization. Not only did the monks themselves work at building, husbandry, and other productive labor, but the people who were the subjects of the convents were banded into trades for special service. Prelates and monks familiar with building work made plans for churches and convents, and directed the workmen. We hear continually on the one hand of monks sent from

convent to convent or called away by this or that bishop to take charge of buildings, and on the other of men, apparently laymen, summoned hither and thither to some convent that needed a building director. The zeal of the bishops and abbots often bore hard on their monks and serfs. We find even in Charlemagne's time the monks of Fulda appealing to the emperor for relief against their active abbot Ratger, who kept them forever at work in building, so that they had no time for anything else. The complaint of an anonymous monkish writer against the ambitious archbishop Heribert of Cologne at the very beginning of the eleventh century is an interesting commentary on the words of the monk of Cluny which I have just quoted. He writes: "Under this bishop first began among us the pulling down of old buildings and the putting up of new. His forerunners had been pleased with very humble and simple buildings, but would have in them great abundance. Yet this bishop and all his successors kept building new churches, new palaces, even new castles, and doing this by forced labor they wore out the working people with utter poverty. For while almost all the time for manuring, ploughing and the rest of husbandry was given under constraint to heaping up stones, and while yet the regular tribute was exacted with extreme severity, the former abundance was reduced to want, and the great

joyfulness which had been under former bishops to abject wretchedness." Surely the people in those days did not give to God that which had cost them nothing. If we needed other testimony than that of the monuments themselves to show the rapid progress of architecture in the eleventh century, those extracts and other like passages would indicate it; for men do not pull down their old buildings till they see how to build better; nor does it need more to show us how universal and absorbing the passion for building had become at this time, and how great a share of productive labor it consumed. Indeed the very rapidity and continuity of the progress makes now one great obstacle to tracing out the sequence of it, for as convents and sees grew rich, and as one device in building followed another, the older works fell behind the advancing skill or taste of their day, and nothing would serve but they must be replaced. Churches, begun as they usually were at the east end, and growing year by year, decade by decade, gaining in perfection as they grew, had hardly reached their western front before the east ends ceased to satisfy, and they must be begun again at the same point, perhaps to go through the same process once more, and even be ready for a second rebuilding. This not only disturbed chronology, but swept away a great part of the evidence of history as fast as it was

provided, and has left the world stripped of most of the buildings of the transition days, making our record imperfect and the way of the student difficult.

The share of the convents in the work is further illustrated in the somewhat obscure history of the lay brethren attached to them, by whom most of the manual work was done. Attracted by the prospect of repose, of steady support, relief from bearing arms and from the oppressions of lay masters, they gathered about the convents in great numbers as these grew able to support dependants. They were mainly mechanics, whose work was for the most part concerned with building. They were sent from convent to convent, from church to church, as they were needed, and were even let out for secular work, but were not free to go at their own will, or work in manufacture of deadly weapons, nor, among the Cistercians at least, for pay. Presumably we owe to them the most of the convents and churches that in the Middle Ages were sprinkled over the face of Europe. They were a rough, busy, and rather turbulent class, half cloistered, half worldly, under vows of celibacy and obedience, and distinguished visibly from the monks not only by dress but by their avoidance of the tonsure. Known as *fratres conversi*, they were nicknamed *Barbati* from their beards, to which they held as tenaciously as some modern soldiers,

so tenaciously that when a certain Premonstatensian abbot would have forced them to shave their chins his bearded brothers mutinied and came near to burning his convent about his ears. Their existence bears strong witness to the control of the monastic orders on architecture, and they furnish a connecting link with the bodies of secular builders whose unions we know of in the south, merging easily into the great unions of workmen who at last took control of architecture in the thirteenth century, and made it a secular thing even in the service of the episcopate.

The famous monastic plan preserved in the Benedictine abbey of St. Gall is not only the oldest architectural working-drawing left to us, but a precise and authentic record of the manner of building in the ninth century, and in some ways more valuable than if it depicted a particular set of existing buildings, for it shows the ideal at which the enlightened builders of that day were aiming. It is a drawing on parchment, two and a half feet by three and a half, dated 820, and sent to Gozpert, abbot of St. Gall at that time, by some friend who is not identified, for guidance or suggestion in the rebuilding of his monastery which was then to be undertaken. Carefully and minutely drawn, it shows with much detail the arrangement of the buildings of a great monastery—the central church surrounded by cloisters, chapels,

dormitories, refectories, assembly-rooms, kitchens, breweries, store-houses, wine-cellar, workshops, infirmary, dwellings for the abbot and for visitors, kitchen-garden, orchard—all that was needed by a numerous, active, and well-to-do community, isolated and sufficient to itself. The church is a large basilica essentially of the Latin type, as we might expect, but with some modifications which show what the accumulated monks were beginning to do even so early in the Carolingian period. It is some two hundred feet long, with a nave forty feet wide divided from the aisles by arches borne on columns, and intended for a wooden roof: the only vaulting indicated is in the crypt under the choir. The transept is as wide as the nave; which is prolonged through and beyond the transept in an eastern arm; and the transept arms are parted off into side chapels for special services, making a defined crossing in the way that we shall consider elsewhere. There are both an eastern and western apse—a German characteristic that we see in the great churches of Fulda, Trier, Mainz, Worms, Laach, and many others, which has been a puzzle to archæologists—one great altar being here dedicated to St. Peter and the other to St. Paul. We are surprised at the great number of altars, there being no less than fifteen in the church, and the aisles even being divided into something like separate chapels by screens against which altars are

set. Near the western apse, but standing apart from it in Italian fashion, are two round towers, which according to the subjoined inscription were accessible by winding stairs for overlooking the universe—*ascensus per cochleam ad universa super-inspicienda*—towers not unnecessary for watching or defence, and connected with the church by galleries or bridges. We are entitled to believe that this plan, devised for an important occasion by someone who was evidently skilled in building, records the latest ideas of that progressive time. It sums up for us many facts which without it we must glean from comparison of scanty and scattered remains of the buildings themselves. It illustrates convincingly the importance and the organization of the monastic communities, the inventive activity with which they pursued the art of building. Dating as it does only six years after Charlemagne's death, at the very beginning of the time of mediæval transition, it may stand as the last type of the Early Christian church, in which germs are already implanted that are to develop into characteristic forms of Romanesque architecture.

III

The conditions of their time gave the Romanesque builders a perfectly free hand ; for all the traditions of classical building had been swept away, had even begun to yield before the Christian church had called up the new basilican type of building. They found this type a ready object for further development, with suggestive forms, but almost devoid of architectural details, and dependent in its structure on a feature, the arch, whose simplest applications alone had been as yet worked out. The mason, and rather an unskilled kind of mason, had architecture in his hands, and this accounts for some differences of detail between the German and the Italian branches of the style. In the cities of Gaul, less completely desolated than those of Italy, and sooner brought to some stability by the establishment of the Frankish kingdom, the revival began in the middle of the sixth century by the restoration of the great episcopal churches of the cities on and near the Rhine, Trier, Mainz, and Cologne. The Lombard kings hardly began building before the seventh century, and of their works it is difficult to say that anything now exists. It is pretty clear that their churches did not differ essentially from the Latin basilicas ; the evolution of new forms did not

begin till after the establishment of the Frankish dominion in Italy by Charlemagne, at the beginning of the ninth century. The cathedral of Torcello, built in that city of refuge at the middle of the seventh century, not by Lombards, to be sure, but by a Roman bishop, may stand as an example of the work of that period, and it has the unaltered form of the basilicas of the fourth century. This evidently was the accepted form of the earliest churches throughout Christendom; it was the root from which the mediæval churches grew alike in Germany and in Italy. We see it unchanged in the oldest German churches that are left to us, which date from the reign of Charlemagne and his immediate successors. The unique exception is the cathedral of Trier, which belonged to the age of Constantine, and whose much altered condition betrays an original type peculiar to itself. The one architectural adornment of these churches, the column, was insisted on so long as the supply of convertible Roman columns held out, and wherever such columns could be found; when and where the columns were not to be had, the pier was substituted and the arch brought back to its original condition of a simple hole in the wall. We may judge what value was set on the marble shafts of Roman buildings when we remember that the emperor Otto I. imported columns of marble and porphyry from Italy, probably from Ravenna,

for the cathedral of Magdeburg. Laborious transportation it must have been in the small vessels of Otto's time—round Sicily, through the Mediterranean, up the coast of Spain and France, through the English Channel and the North Sea, and three hundred miles or so up the Elbe. The eastern apse, the division into aisles, and the clerestory, except in the smallest churches, were universal. Of this type is the basilica of Steinbach built by Eginhard, Charlemagne's minister, beside the Rhine, perhaps the oldest German mediæval church that now survives except Charlemagne's own round minster at Aachen (Aix-la-chapelle).

Italy was still the model of all that was beautiful and great in that age, at least to the people of the north. There is a touch of humor or of pathos, as one looks at it, in the effort of the great Frank, greater than the men he emulated, to pattern his mushroom state, whether in polity or in art, on the mature empire which had been the growth of a thousand years in both—that ill-cemented state which fell to pieces before it reached the hands of his grandchildren; his second Rome, with its extemporized Forum and its Senate of half-civilized Franks, his uncouth buildings which rudely mocked the architecture of Ravenna. We know that he gathered learned men, artists, and skilful workmen from Constantinople, that with the permission of Hadrian I. he brought col-

umns and marbles and mosaics from the palace of his great forerunner Theodoric at Ravenna. The poet Angilbert tells of the zeal with which he pushed his schemes of building as soon as the cares of conquest gave him time. "The second Rome lifts herself," he says, "in new unwonted bloom with massive buildings whose lofty domes touch the stars. The godly Charles stands far from his palace selecting the various sites, and fixes in their order the high walls of the future Rome." For his enormous building-work Charles collected workmen "from all the countries this side the sea," meaning presumably the Mediterranean. He included doubtless Italy, though the times were changed since in the middle of the sixth century Bishop Nicetius had to send there for workmen to restore his cathedral. By this time also there had been a considerable growth in church building under the impulse of the missionary monks; at Fontanelle in Normandy there had grown up a community of builders, an early example of those which became afterward characteristic of the great monasteries. From this community came the monk Ansegis, Charlemagne's architect or superintendent of building, who after the emperor's death returned to his convent as abbot. He had before this been succeeded in the direction of the buildings by Eginhard himself; and there is again a touch of humor in the story

that this minister, anticipating the Alberti of seven hundred years later, betook himself seriously to the study of Vitruvius. Surely the buildings which came of this study would have struck the architect of Augustus with wonder.

The Romanesque builder, I have said, had a perfectly free hand. Not only had the classical Order been broken up and thrown aside, so that there is not, I believe, in the whole course of Romanesque building any sign of an attempt to revive it—I am speaking of the main body of the Romanesque—but what is perhaps more natural, the classic idea of design, the mode of proceeding was also lost, the idea of using a fixed architectural element like the order and enlarging it to suit the size of the building. The order, as we saw, was in classic architecture enlarged or diminished, as the building was made larger or smaller, so that a great temple was a small one magnified. This resulted in an absolute difference of method in design between the two styles, a difference which was not lost till the classic method was brought back in the Renaissance. The Christian builders, on the contrary, from the earliest churches that we know, those of Charlemagne's reign, used elements that were comparatively uniform; if the church were larger, the number of elements was increased, not their scale. The unit of size was practically the intercolumniation, that is, the width

of the arch. It is singular to notice that this unit did not vary materially among all the basilicas that are known to us, in Rome or Ravenna or the other Italian towns, in Syria or Palestine or Africa. The original basilica of St. Peter had arcades of twenty-four arches, the little ones of Syria perhaps a half a dozen, but in all these examples, and even in the round churches, the distance from centre to centre of the columns hardly varies from ten or twelve feet.¹ We cannot say what, in the consciousness of the builders, gave the scale to all these churches—whether it was the convenience of constructing the arches, which masons of small skill would not willingly build much larger than these, or the size of the columns which were at their disposal, or the combination of the two. The proportion of the arched interval, which came in the progress of the Romanesque to fluctuate largely, did not in the early churches differ greatly from that which the Romans had fixed upon, and the columns are, on the whole, as uniform in size as the arches. It is astonishing at first thought that the builders could have found ready-made so many thousands of columns fifteen or eighteen feet high, and have

¹There is a marked exception in two of the churches of Central Syria, at Suweda and Ruweiha. In Ruweiha where, to be sure, the arches rest on piers, they are as wide as the nave.

used such a small proportion which vary much from these limits. One is tempted to believe that it was the habit of the Empire to build to this scale. We know that the Romans, unlike the Greeks, liked to build in stories with an order to each story, when the building was not a temple or some other great monumental structure. A column sixteen feet high means an order twenty feet high, or, if a pedestal is added for the sake of dignity, perhaps twenty-four or twenty-five. These dimensions, account being taken of climate and human habits, seem natural enough for the stories of such domestic and civic buildings—palaces, villas, porticos and the like—as were of pretension enough to be adorned with orders, and they chime well with Italian habits of building in later times. The question is perhaps worth investigation if any one is found ready to study it in the scanty remains of Roman civic and domestic architecture.

This habit of proportion, once established, lasted all through the Middle Ages. The scale of the parts of a building had been adjusted no longer to an artistic system but to the convenience of man, and indirectly to his stature. It never again, till the revival of classic architecture, became the habit to set up columns of such size as to dwarf the human beings who gathered about their bases, or to call for enormous labor in hand-



CATHEDRAL—GENOA
South Doorway



ling them. The practical man had taken building in charge. Struggling from the first with constructive difficulties which bore hard on the imperfect skill of his generation, he henceforth gave himself up to working out the mechanical processes of construction, and shaped his slow-growing artistic sense by their guidance. Romanesque architecture, and after it Gothic, became as absolutely constructive as the Roman had been conventionally artistic. When with the development of their style, the churches grew lofty and complicated in structure and the builders wanted to use tall pillars, they did not increase the thickness of the shafts accordingly. On the contrary, while they grouped and multiplied the shafts, they thinned them down to suit the semblance of their relative constructive importance, without regard to their increasing height, till they looked like clusters of reeds. The capitals and bases, which in the classic style had been proportioned to their height, remained approximately the same, however tall the shaft grew. Cornices and string-courses, mouldings and capitals, did not expand as buildings grew large. Though the interiors of the larger churches were more open and the spans of their arches in time were widened, the scale of the details did not increase in proportion—the difference between a smaller church and a larger one was not based upon the size of the parts, as in a

Greek or Roman temple, but on the accumulation of them. This comparative fixity of size in details gave a standard of measurement which insensibly accustoms the eye to judge of dimensions, and to compare one with another. There is no need to cast about for something to give scale to a mediæval building. The scale is there, and the spectator is spared that disappointment in the apparent size of the churches of the Middle Ages which he too often feels in classical buildings.

IV

Smallness of material goes naturally with smallness of details, and arches and vaults are more easily laid with small stones than with great. The mediæval system facilitated the work of the builder enormously. There was no need of monolithic shafts or big blocks of stone. The largest churches were built of stones that could be got into their places by hand, without calling for the prodigious appliances which the Egyptian and Roman builders must have used. The work could be carried on rapidly. It did not demand the massing of men in battalions, as we see them sculptured on Egyptian walls, but allowed of indefinite subdivision, each man to his own part. At the same time increasing complexity of construction led, as we shall see, to close discrimina-

tion of the office of every part and detail in the structure, to separate expression of every function in the forms. When at last we come to the Gothic builder, so free and facile that he would cover his whole building with decoration, the constructive instinct was almost abnormally intensified in him, so that his smallest detail must justify itself to him by at least a semblance of mechanical purpose. The full florescence of Gothic architecture suggests, if I may venture on so medical a simile, an actual hysteria of construction. Only rare decorative grace and a marvellously free fancy could save it at its best from such a pedantic dryness as did overtake its last stages.

The columns which were borrowed from Roman buildings for the earliest churches had a monumental value of their own apart from their architectural office. The chroniclers lay great stress on the value of the marbles. *Tam marmora quamque musiva*, says the writer who describes Charlemagne's plunderings from Ravenna: it is *marmor pretiosum* again when we are told of the columns brought for the cathedral at Magdeburg. Apart from the difficulty of cutting them, for which the early Christian workmen lacked skill, and the fact that it was easier to steal than to reproduce, the beauty and variety of the substance was temptation enough. The column, as it had been the most important ornamental feature of Roman architect-

ure, became the one structural adornment of the churches; to many it gave the only beauty they possessed. In remote places, where old marbles were not easily come at, and piers had to be used to support the main arcades, if a few columns or a pair could be had, they were reserved for the adornment of the most sacred part of the church. Far down into the twelfth century and even the thirteenth, when the form and details of the churches had been thoroughly elaborated, and the richly clustered pier had established itself as the normal support of the arcades, the column was preferred, at least in France, for the circuit of the choir. In the Romanesque the column¹ was everywhere the builder's pet child. As soon as he acquired skill to make them easily for himself he abandoned the classical stature and made them of various sizes, but chiefly small, reserving them mostly for decorative positions, and leaving his hard work to be done by piers. It seemed that he never could accumulate enough to satisfy his desire. The belfry stage of the old tower of St. Front in Perigueux is a mere stockade of columns, with hardly room to pass one's arm between them. The façade of Sta. Maria della Pieve at Arezzo is covered by a throng of columns stand-

¹ In all strictness the name column belongs to classic architecture, but there is no other suitable name for the same thing in other styles, and I use it here freely, as it is most often used.

ing on shelves as if exposed for sale, and bearing small arcades, while the upper story fairly disappears behind a fence of them, too thick set to carry any arches at all. So fond of them the builder grew that he sought out and invented places to put them. He cut them in halves and set them up like buttresses against the walls of façades and apses, running them into the cornices; he made nooks for them and set them fourfold, sixfold, tenfold, in the jambs of doors, where the early Christian builders had posted them as sentinels in pairs, like Jachin and Boaz in the porch of Solomon's temple; he thrust them into his windows for mullions; he cut out hollows to hold them in the angles of walls and buttresses. In some places and in moments of transition he built great tower-like piers in the form of shafts, after the manner of those of Karnak, as in the abbey of Montmajour and the nave of the cathedral of Durham; or later he occasionally made stout columns to carry the great niches and nave-walls, as in San Zeno at Verona and the cathedral of Paris. But usually he clustered them about piers, making them no larger than his own body, and thinning them down from that to the smallest thing that could stand alone in stone, or even to slender rods which, engaged on one side in a pier or wall, were really strips of moulding fitted with capitals and bases. These multiplied upright lines, distributed in

groups, served, like the horizontal mouldings of classic architecture, to mark the natural subdivisions of the composition, to emphasize the mode of its construction, to give richness and the contrast of line with surface. The classic architect enforced the uprightness of his column by flutings and channels, and his structure of beams by the horizontal lines of architecture and cornice. The mediæval builder, to whom his shafts and arches were everything, made light of his horizontal members, emphasizing them no more than the natural division of his stories called for, and continually multiplying his verticals. The panelling of walls by pilaster-strips, which began even in the Latin period and was continued or resumed in the Romanesque, enhanced rather than diminished their look of solidity. Through all its changes Romanesque architecture kept much of the massiveness and consequent air of repose which distinguished it from the Gothic. The arches were always, at least in the exteriors, openings in a broad wall, and never took on that frame-like aspect which Gothic construction gave them. So long as the distinguishing form, the round arch, was retained, the natural structure of masonry in horizontal courses was not put out of sight, string-courses and cornices were not slighted. Buildings preserved a fair breadth of tranquil surface, a happy balance of line and mass, of movement and

repose. But meanwhile a gradual change went on, and upright lines came to more and more emphasis. As constructive needs dictated, piers were more subdivided, flat pilaster-strips swelled into buttresses, round apses became polygonal, round towers octagonal, surfaces were divided, but always vertically, angles and lines multiplied. At last the lines became more interesting to the builder than the surface, and he sought opportunity to accumulate them. Their upward spring fascinated him; he built as high as he dared. The constructive effort to hold up his heavy vaults challenged expression. The time of the transition came; his Gothic arches were sharpened to points; roofs grew high and steep; towers were multiplied and crowned with tall spires; buttresses were set on every angle whether they were needed or not, and finials upon them even more for the sake of the upward pointing than for their constructive value; horizontal lines were cut through and elbowed aside; the very wall to which Romanesque architecture had owed its distinctive character was suppressed as an intruder. The eastern end of the cathedral of Amiens looks from without more like a huge stack of upright beams and poles than like a walled church. It is curious to note the returning analogy between the extremes of European building. Greek architecture had been a cunning frame of beams of stone,

upright and horizontal, fitted together like cabinet work, with the wall dissembled behind them; Gothic became a frame of shafts and buttresses, of oblique props, and arches that were curved braces, with the walls rejected altogether. Greek had held with a stately content to the level lines of the earth and the sea; Gothic spent itself in the upward rush of an impetuous aspiration. The imperial architecture and the Romanesque its successor were those of massive walls and unstrained arches, here sumptuous and there severe, apt alike to express repose or energy.

As the lines of the shafts accumulated, so did the lines of the arches—perhaps sooner, for it is difficult to determine the sequence of changes.¹ The distinction of the arch is its curve, and the natural instinct is to emphasize this by repeating it; so the Roman builders did, by carrying the form of the banded architrave about it as an archivolt; they kept the soffit square and decorated it by panelling, like the architrave. The Romanesque builders treated the arch with more vigor, or

¹ The compound or broken pier seems pretty clearly to have been composed at first of the united jambs of arches that abutted at right angles, as where the arcades of the nave met the triumphal arch. As early as the first half of the sixth century the windows of San Apollinare in Classe were circumscribed by a concentric round-headed panel. It is but one step from this to the double recessed arch, which indeed appears in the apse of Sta. Sofia at Constantinople.

at first more rudely, and broke it into recesses or steps corresponding to those in the pier or jamb that supported it. This at once gave importance to the arch, enforcing its lines with more boldness, and establishing an intimate connection with its supports which was lacking to the Roman. When the steps or nooks were multiplied, as in the doorways, and those in the jambs were filled with shafts, it was natural to fill those in the arch with mouldings that answered to the shafts. So a still closer union was made between the arch and the jamb, and so were designed those deep, expanding, hospitable doorways, charged with all manner of carved ornament, which delight us in the twelfth-century churches. They joined arch to arch as they joined shaft to shaft. Their picturesque arcades make the glory of the so-called Lombard style, enlivening the walls, and making deep shadows under the eaves, of countless churches throughout Italy and Germany; they lined the cloistered courts of the monks for century after century all over Europe, from the rude arcades of San Stefano, in Bologna, to the graceful galleries of St. Trophime at Arles, and those that mark the transition to the Renaissance in the Certosa at Pavia. Where there was no room for shafts to carry the arches they accumulated them in cornices and corbel-tables. With the vigorous constructive habit of which I have spoken, their

effective guide because they had no other, if for no different reason, they made the column the chief means of their decoration and expression, while the properties of the arch practically controlled the structural forms of their buildings.

V

Although the accidents of fire and instability and the destructiveness of a growing ambition were, as we see them to be in our own country and century, the chief occasions of improvement, it was natural that the men of the Middle Ages should try hard to build churches that would not have to be constantly renewed. Inasmuch as the wooden roofs were the most vulnerable parts they worked with dogged persistence through centuries to devise a practicable roofing of stone. The builders of the Empire had contrived an excellent system of vaulting, but it required skilful planning and ponderous abutments ; it was incompatible with the high, thin walls of the churches, and the art of constructing it was lost. The story of the mediæval experiments is long, difficult, and intricate—I shall be easily forgiven for not trying to write it here. The history of vaulting is practically the history of mediæval architecture. It was also the history of a new type of church, the cruciform. I have said in the essay on the Age

of Constantine that the cruciform type was not early Christian, and that it was never naturalized in Rome till the Renaissance; that in the Roman type the transept was not two arms, but one body; that the nave did not pass through it, but abutted against it, as the staff of a crutch abuts against the shoulder-piece. In the cruciform church the nave and the transept interpenetrated. Their intersection, the crossing, belonged structurally to both, and the nave was prolonged beyond the crossing in an eastern arm to the end of which the apse was removed. The transept arms were very often separated by the expansion of the choir,¹ which occupied the eastern arm, and which occasionally even extended some distance down the nave. The cruciform type, once established, which it hardly was before the end of the eleventh century, became the model which lasted till the Renaissance, and in less strict form has lasted ever since. The great churches of the twelfth century and of the Gothic period were built according to it.

The most important characteristic of the cruciform church—more significant in truth than the fact that it was cruciform—was its division into

¹ By the choir I mean that part of the church, greater or less, which was set apart for the celebration of the service, and which was the outgrowth of the Chorus Psallentium of the early Christian churches. It is always the eastern arm, often something more.

bays. I have said that the unit of size of the basilicas was the arch—one measures their size by counting the arches. But there is no unit of construction ; as the Germans would say, there is nothing organic in their design. The walls in the aisles and above the arcades are perfectly flat and uniform, broken only by the windows, which may or may not correspond with the arches. The developed Romanesque church or the Gothic church is divided into bays corresponding to a single arch, or sometimes to two, by shafts which run up the clerestory walls and by arches or vaulting-ribs which cross the nave and aisles. The arms of the cross are thus divided into units of construction. They are jointed, as it were, like a vertebrate animal ; the size of the church depending on the number of joints. They might be built in sections, each complete as far as it went, and in fact they were very commonly so built, being begun at the east end and continued westward as fast and as far as money was found to carry them. They often went on in this way year by year, generation by generation ; the history of such building is written on the interiors of many churches ; sometimes a blank wall across the end shows where the last funds gave out, leaving the western bays unbuilt. One bay thus came to be a model for all the parts of the church, and its design once achieved, the rest was only the assembling of the



CATHEDRAL--PARMA
Double Bays and Clustered Piers



right number of parts, like laying a pavement. Given adequate drawings of a single bay of the cathedral of Cologne, and such a sketch-plan as could be held in the palm of the hand, we could build from them the whole church, ready for the apse, the façades, and the towers. The bay at last became, again with an analogy to classic art, a pattern or formula out of which a whole church could be educed, as a Greek temple or stoa could be educed from an order. The difference was that while the limits of variation were very narrow in the order, in the mediæval bay they were very wide. In the order they hardly went beyond slightly lengthening or shortening the column and varying the curve of a moulding. In the bay, although the general ordinance of an arch between its two supports and a wall above carrying its section of vault on wall shafts was essential, there remained the proportion of parts, the choice of shaft or pier, the outline of piers, the forms of capitals, the shape of vault and distribution of shafts, the use or neglect of triforium and even of clerestory. These were all at the designer's pleasure, and his pleasure so varied that it is as hard to find among the thousands of mediæval churches that remain to us two bays in different ones that are quite alike, as to find two oak-leaves that will match.

The invention of the bay was as useful for con-

struction as for design, as soon as the problem of vaulting was attacked. The Roman vaults had been continuous geometric cylinders to whose surface a mason's line or straight-edge, laid parallel to its axis, would have fitted close from end to end, and unbroken by any ribs, even where they were groined, though chains of brickwork were often let in, when the shells were of concrete, to strengthen them while they were fresh. If they were groined, it was by intersection with other cylinders of the same kind. Such vaults, being continuous, gave no places to stop, and must be built continuously from end to end, or else a ragged and unstable edge of masonry was left, which involved an ugly patching. To make the groins look well required a precision of workmanship which the Romanesque builders up to the twelfth century did not have. But when the builders learned to divide the vault into separate compartments by heavy projecting ribs which they carried across the aisle or nave from pier to pier, they had a series of sections which could be built one by one, each complete and squarely finished. They would naturally build with less scaffolding; there was no need for so careful adjustment of the surface, and imperfection of form was masked by the heavy ribs. Moreover—what is perhaps more decisive, as men are made—there was a natural occasion for stopping at one place

rather than another, that is, at a rib; the work could be left visibly complete as far as it went.

It is not easy to discover the beginning of the use of the bay, or of the vaulting of churches, or when and where the nave first penetrated through the transept and gave the church the shape of the cross, or to judge whether Italians or Germans, lay builders or monastic builders, were the leaders. But apparently the vaulting was not seriously undertaken until the division into bays was achieved—or at least the idea of a bay distinctly cut off from the adjoining parts. It is singular that the first example of this, as of so many other mediæval ideas, is to be found among the early churches of Syria. The church of Ruweiha already noticed, although not cruciform and probably of the sixth century, is divided in pure Romanesque form into square bays which are separated by high orders across the nave bearing upper walls that reach the roof. The piers are subdivided in Romanesque fashion into pilasters apportioned to the different arches, and those which carry the cross arches have capitals high up above the rest. The whole might have belonged to a Romanesque church of the twelfth century. Yet there seems to have been no echo of this in any early basilica of Italy or Germany. It is to the circular or polygonal aisles of the round churches that we must look for the first di-

vision into bays, of which the Byzantine churches, indeed, had set the example. Here in the round churches the necessity, real or supposed, of buttressing the inner ring-wall against the thrust of the dome led to vaulting the aisles from the beginning, and the convenience of vaulting to the division into bays. We see this in San Vitale of Ravenna in the sixth century; it was probably revived next in the Rotonda of Brescia, if we may believe the tradition that this was built by the all-pervading Theudelinde at the beginning of the seventh century or by later Lombards at the end of it. It was repeated by Charlemagne in his minster at Aachen at the beginning of the ninth. Cattaneo, perhaps the best-informed student of early Italian architecture, argues that the bay was first set off in the basilican churches when the monks, to provide a sheltered nook for their midnight services, walled off from the aisles or transept a section of the nave next the apse, and vaulted it. He finds the first recognizable case in San Ambrogio at Milan, which was turned over to a colony of monks at the beginning of the ninth century. If this theory is right—and the plans of St. Gall and the arrangement of various early monastic churches in Germany accord with it—the innovation meant in churches with a transept the prolongation of the nave beyond the transept, and so directly made them cruciform. Thus it

would accomplish at once the transformation to a cruciform plan, the establishment of a vaulted bay, and by the meeting of cross and longitudinal arches the establishment of the compound pier, all before the end of the ninth century. But we have seen that the next hundred years were a disastrous time for architecture, and that not till the beginning of the eleventh century did building revive abundantly. During the eleventh, twelfth, and thirteenth centuries it looked as if all the active force of the world that could be spared from fighting, especially north of the Alps, went into architecture. In the first half of this period, the centre of progress, it would seem, shifted northward. Germany and France, where the monks had most numbers, wealth, and influence, seem to have led the development. The problems of building had been solved, or the way of solution had been pointed out in the struggling period of the ninth and tenth centuries. The progress toward the perfected church of the twelfth looks very rapid to our distant eyes, though it took a hundred years of eager tentative labor, of alternate advance and failure, of experiments tried and results treasured or cast aside. With a unity of effort and progress that seems to us astonishing, considering the endless subdivision and political hostilities of the time, myriads of workmen in communities scattered all over Europe toiled

for generation after generation at the working out of one ideal, while the rich of the world gave their wealth, the intelligent and pacific their thought and care; even the princes and knights whose lives were given to the destruction of their neighbors planned, when death should make an end for them of war, to hallow its plunder in building churches for the glory of the religion of peace.

VI

The eleventh century was spent in the preliminary work of learning to vault the aisles, where the want of a solid abutment on the side of the nave made it specially difficult. The slender column was hardly sufficient stay against the pressure of the groining, and there being now no supply of ancient columns to be had, it was the more natural to resort to piers. The cross-rib called for a special support at its springing; therefore pilasters, or more often half-columns, were set against the pier and the outer wall of the aisle. Thus in the early stages was established the characteristic habit of incorporating in the pier a representative of every member in the structure above which bore upon it. It bears witness to the close pre-occupation of the builder's mind with the different strains which he was trying to group and withstand; and the plan of the pier which thus em-

bodied them must have been for him, to use the engineer's language, a diagram of stresses to be borne in mind and provided for.

The covering of aisles with vaults whose span was only a dozen feet or so, and whose height above the ground was hardly more, was a comparatively simple problem. The vaulting of crypts, which began as early as the ninth century and grew with that cult of the saints that led to an eager traffic in their bodies and bones all over Christendom, had been naturally a school for the more difficult covering of churches. Their subterranean vaults, divided into narrow aisles, amply abutted by the solid ground and having nothing but the floors of the churches above to carry, were easily covered with groined cylindrical vaults, in whose capitals the extraordinary innovation of the Germans in ornamental sculpture first shows itself. The vaulting of aisles above ground had been done very early, we have seen, by the Byzantine architects, and in the western round churches. The difficulty did not tax too severely the unskilled masons of the tenth century. But to construct the vaults of a nave thirty feet wide or more, and effectively stay against their thrust the lighter walls of a clerestory fifty feet high, balanced on the pillars of an arcade, was a different and a perilous thing. The study of the builders' efforts to accomplish this is very interesting to the special student,

and equally perplexing. We should not say, as I have heard a modern engineer contemptuously assert, that for every mediæval vault that stood two tumbled down; yet the chronicles of the eleventh century are full of stories of falling of churches. But with the same persistence with which their forefathers had repeated their attacks on the Roman Empire through defeat after defeat, the builders attacked and reattacked the difficulties of their building. Experiment after experiment was tried; failure followed failure; every failure taught something; one succesful device disengaged itself after another; one danger after another was guarded against, till by the twelfth century the workmen had learned their task. They succeeded in building vaults over their naves that would stand safe, and after that it was only a question of evolving the most satisfactory form for them. Progress was fast, and this century, producing the splendid churches of the finished Romanesque, developed that sure-handed skill whose ease, audacity, and grace, after the change to the forms of pointed Gothic, we admire in the incomparable vaults of Amiens and Beauvais.

The ways that opened to relieve the builders were two—to lighten and strengthen their masonry, and to distribute and counterpoise the pressures so as to make them harmless. To build a shell of concrete half a yard thick in the Roman fashion,

and balance it safely on the clerestory walls of an early basilica, was hopeless. To stay a Roman vault required the ponderous abutments of the Romans. The slender columns with which the Christian builders began, designed to support four feet of entablature, would not have borne a high Roman wall : their clerestories, having only a light wooden roof to carry, and being steadied, not strained, by the trusses, were as light as they could build them. The Italian masons built them of brick, which makes the lightest of firm walls and the firmest of light walls. The men of the north, not having Roman skill or Italian brick, but with Roman ruins at hand, had begun by imitating as well as they knew the Roman walls faced with stones and filled with concrete or rubble. They did this badly ; their walls were rude and weak, and seem, after standing a few years, to have been continually crumbling. It took them two or three troubled centuries to educate their workmen to even tolerable skill. The building of Charlemagne, with all the help of mechanics imported from Italy and the east, is rough and uncouth. The workmen had to learn to build firm walls of coursed stones, to cut shafts and mouldings and capitals, to build close-jointed piers and thin vaulting shells of small stones. This seems not to have been accomplished without long training in the schools of the monks, and its fruits do not show themselves

till the season of growth that began with the eleventh century. It is possible to arrange a series of examples that make a natural sequence from the rudest beginning to the completest result, but the difficulties of chronology are so many that no such sequence has been proved to be historically exact; at various points we are left to inference and probability. The division of the nave into bays, which followed that of the aisles, seems to have preceded the vaulting, for there are many churches so divided which have never been vaulted, and many others where a vaulting was added a century or more after the church was built. We have seen how the little church of Ruweiha was divided, as early as the sixth century, by arches which bridge the nave. The non-Lombard Tuscan church of San Miniato at Florence is a well-known example of the same thing, but there was evidently no intention of vaulting it. The subdivision of the nave by alternate supports, indeed, which came from the east and is suggested very early in the naves of St. Demetrius at Thessalonica (ca. 500) and of Sta. Maria in Cosmedin in Rome (780) built by, or for, a colony of Greek monks, seems to have charmed the taste of the northern builders. The alternation of piers and columns, or some other way of grouping the arches by twos or threes, is very characteristic of Romanesque churches in Lombardy, Germany, and England, and even appears in

France. The churches of San Ambrogio at Milan, the Trinité at Caen, Waltham Abbey, the cathedrals of Speyer, Mainz, Worms, Meaux, and Noyon are examples. The naves being, as a rule, twice as wide as the aisles, one bay of the nave answered to two of the aisles, and both remained square, or nearly so. This introduced an element of variety in harmony, a rhythmical element, as German critics like to call it, which pleasantly breaks the monotony of the long arcades, and adds the dignity of a larger unit, while it does not sacrifice scale, but brings animation into the design of the Romanesque interiors. It is one of the most attractive features of the churches of the eleventh and twelfth centuries, one which, I think, the eye misses in the somewhat monotonous perspective of the interiors of the thirteenth.

When it came to vaulting the naves, the great square compartments that covered those double bays gave them an air of special nobility. The dignified amplitude of the broad vaults of the cathedrals of Speyer and Mainz, for instance, and in a less degree the six-part vaults of the subsequent transition, impress the spectator by comparison with the smaller compartments of the Gothic vaults. The subdivision of the bays by the smaller aisle-bays preserves their scale, and redeems them from the sparse bareness of some of the Italian Gothic churches, whose great undivided bays, like

those of the cathedral of Florence, made them look bald and empty, while yet they destroy the impression of their size. But the weight of these great sections of vaulting, four times as large as those of the aisles, made them so much the more difficult to deal with. Bearing down with their pendants on every alternate pair of piers, they made it necessary that these should be very massive, while the intermediate piers could be comparatively slight, in some cases actually reduced to stout columns. This again added to the effect of contrast, giving more emphasis to the large bays and the alternation of supports. But to stiffen the clerestory wall against the thrust of these heavy vaults was the chief requirement. The many expedients that were tried necessarily amounted to one of two things—building against the nave wall from without, or increasing its own weight and rigidity. The first could be done and was done in many churches by increasing the height of the aisles so as to bring the pressure of their vaults higher against the walls of the clerestory; and this led to an increased habit of adding an upper gallery to the aisles which was also vaulted, its vault rising high enough to nearly contrabut that of the nave, sometimes quite, as in San Ambrogio at Milan, where the vault of the nave actually springs from the level of the floor of the upper gallery. Such upper aisles are common

in German churches of the later Romanesque, and appear even as late as the transitional cathedrals at Paris, Noyon, Laon, and others, as well as in French churches of the eleventh and twelfth centuries. But in other churches, such as the great Rhenish cathedrals of Speyer and Mainz begun in the eleventh century, whose naves are over forty feet wide, the vaults are abutted only by the massive clerestory walls, which stand, sheer and unbuttressed, more than a hundred feet above the pavement. This calls for great weight of piers and walls; the piers are heavy and close, the walls have by this time grown so thick that there is room in their thickness for the outside galleries of which Lombard architects were fond, which decorate the eaves of many churches on the Rhine and in Lombardy, or for the triforium passages that became common in France. The builders of Auvergne, in the middle of France, found a way of their own of meeting the thrust which deserves to be mentioned. They covered the nave with a continuous barrel-vault, and to stay this vault they built tall aisles in two stories, the upper gallery being covered by the half of a similar vault whose crown bore against the wall of the nave near the springing of the main vault, and made a continuous abutment for it. The lower story of the aisles, vaulted sometimes with groining, sometimes with transverse barrel vaults, stayed moreover

with thick walls and heavy buttresses which by this time were adopted, made a massive cellular structure, solid enough to withstand the whole pressure. It was taking the bull by the horns—for the great vault was built in the most perilous shape, needing support at every point and loaded moreover in many cases with a heavy stone roof—and meeting the difficulty in Roman fashion, though not in Roman form, by sheer weight of masonry ingeniously disposed. The churches of Notre Dame du Port at Clermont in Auvergne, and of St. Etienne at Nevers are fine specimens of this treatment. These are small churches; would we were allowed to see how the same problem was solved by the builders of the great Benedictine church of Cluny, whose barrel-vaulted nave, of thirty-five feet span and more than a hundred feet high, stood firm till it fell before the sordid devilry of the French revolution. The largest and perhaps the finest of Romanesque churches, more than 550 feet long, with double transepts, double aisles, and a throng of towers—it was sold at auction for its materials and pulled down. It is some pleasure to know that this performance brought out from Napoleon, when as emperor he was besought to visit the town, the scornful retort: “You have sold and destroyed your beautiful great church. Go, you are Vandals, I will not visit Cluny.”

But this ingenious achievement of the French builders was a digression from the direct line of development that was followed by the Germans and the men of the north of France. The system was too heavy, too laborious, and therefore too costly to prevail. When once vaults had been made to stand secure, the effort was to lighten construction, and suppress unnecessary masonry. The building of the great churches, which was the chief public concern of the communities in which they were, meant a prolonged strain on their resources and energies; it called for a persistent effort to which we are strangers nowadays, an effort of generations, sometimes of centuries. No wonder that the builders were eager to hasten the work and see the result of their sacrifices, that the chronicles are full of disasters due to haste. Their constructive instinct, sharpened in the long struggle with mechanical difficulties, told perhaps as efficiently in the same direction. They evidently took delight, as they went on, in banishing all superfluous filling from their buildings, as the athlete works off his superfluous flesh. Like him they liked to display the muscles and sinews that did the hard work of the structure, the ribs and shafts that held it together, and even to suggest them where the construction did not directly discriminate them. The greatest step was made when at the end of the Romanesque period the idea occurred of set-

ting independent ribs on the edges of the groins, as they had long before been set across the aisles under the surface of the vaults. Presently also wall-ribs were set against the wall where the vault abutted. This once done, the vaulting was divided into a series of comparatively small cells to be separately constructed. The ribs could be built first, and made a complete skeleton—a permanent scaffolding, Viollet-Le-Duc called them. They were built as suited the plan of the vault and bore the weight and dictated the shape of the light shells that filled in the spaces between. It is perhaps a common impression in one who looks up at a mediæval vault that it is a great continuous shell to which a series of subdividing ribs is applied. But it is something quite different. There was a certain contumacy in the ribs which made combination difficult and tended to disturb the shape of the vaults; for they were all semicircles, and being of different diameters, especially when the bays were not square, were of different heights. So the centre of a compartment, where the high diagonals crossed, was hunched up into the semblance of a dome. The ribs were set up like the wires of a cage, and the triangular cells between were filled each by its independent arched shell with less concern for continuity of surface than the lobes of a melon. The separate cells were hollowed and warped and twisted into any shape

that the independent ribs required, and the whole is as different as can well be from the fair broad surface of a Roman or Renaissance vault.

The builder's eagerness to illustrate construction led him as fast as he added ribs to his vault to put under each a separate shaft proportioned to its size, which should seem to carry its weight down to the ground or to some obviously firm support below. So, as the ribbing grew complicated, and the archivolts of the arcades were more and more divided, were developed those richly grouped piers whose tall vaulting shafts, climbing from the floor to the vaults and spreading in ribs over their surface to meet those from the other side, gradually substituted a continuity of upright lines for the continuity of surface that was disappearing. These piers, marking the confines of the bays, symbolizing and summing up in their partition the structure of the building, have suggested the remark that the mediæval church was planned from the top downward, inasmuch as the plan of its very bases depended on and recorded the whole arrangement of the vaulting. We have been told that the oblong groined vault was impracticable till the pointed arch was applied, which made it possible to bring arches of different span to the same height; but as a matter of fact oblong groining is as old as Justinian, being found in *Sta. Sofia*; it was a good deal used

in French Romanesque churches, and somewhat in Germany. By the time the transition came on, bringing that use of the pointed arch which was first a structural convenience and then a fashion, the besetting difficulties had been surmounted, the direction of progress was clear, and architecture was developing with an impetus which was to carry it forward through three centuries. Even the scheme of decoration was clearly established, though its forms were open to change; there was nothing to do but go on extending and refining the application of the principles of construction and ornamentation which had been evolved.

VII

Nothing more conspicuously distinguished the Romanesque church from every building that had preceded it than its towers. Much speculation has been spent on the questions when and where these towers were first adopted, and for what purpose. Was it for defence, for outlook, for appearance, or to carry bells? We cannot decide; we can merely recall that till towers were adjoined to churches they had been used only for defence, as part of town walls; that the oldest church-towers, those of Italy, not needed for defence, were yet not incorporated with the churches, but stood apart on one side; that although bells were

in use for churches as early as the seventh century, till the eleventh they were so small that to build large towers to carry them was preposterous. And yet again we may remember that in the deserted buildings of Syria, that strange quarry of features that reappear in mediæval architecture, we see in the church of Turmanin a pair of towers, with arcaded chambers like bell-fries, flanking the great arch of the open vestibule. As for date, though a few of the towers of Italian basilican churches, or rather the lower stories of them, are ascribed by writers of credit to the seventh century and even to the sixth, they are set later by other authorities, and they are monuments which have nothing to do with the churches, though they stand near and group with them. With the sole exception of the architects of two or three of the Syrian churches no one before the Romanesque builders seems to have thought of making a tower an integral part of a church. Perhaps the first example we know is Charlemagne's at Aachen, where two small round towers flank the great two-story entrance porch. The church is on the boundary line between Early Christian and Romanesque, and the towers are only stair towers; in the plan for the monastery of St. Gall, of which I speak elsewhere, and which dates a score of years later in 820, the two round towers are set entirely apart from the church in

Italian fashion. The fact that there are two, while most Italian churches were contented with one, is already significant of the enthusiasm for them which the northern builders showed as soon as they began to use them. It is also significant of that greater fondness for picturesqueness which has always characterized the people of the north. The Germans especially, living remote from cities, and building apart among hills, rejoicing apparently in the romantic aspects of nature, embodiments of picturesqueness in their lives and customs, were apt to build high up, where their churches and castles rose conspicuously amid the most pictorial surroundings. It was of their temperament to like things that were striking, emphatic, and the strong accentuation which towers give to an architectural composition was in keeping with this. It was also natural that a race which spent its days in ranging through woods and hills, all whose lives were outdoor lives and their whole country an enchanted wilderness, should take thought for the outdoor aspect of their buildings and like to see far off their towers rising above woods or rocky summits. I have already quoted the judgment that calls the architecture of the basilica an architecture of the interior, and this was not unnatural for people who lived among streets. The architecture of the north was for outside effect as much as inside;

the picturesque feeling of the northern people showed as fast as they developed an architectural sense and began to build after their own instinct.

The first position for the towers was on the front of the church, where in the early Romanesque a single one covering the main entrance, or more often in Germany at least, a pair embracing it between them, was almost always to be found, and was the most important factor of the façade. They make the most conspicuous difference between the churches south of the Alps, where they are almost always lacking, and those in the north. The German builders could hardly have enough of them. They soon added them to the sides of the choir, and fell into the habit of building a larger one over the crossing. Often towers were added to the ends of the transepts. It became common for churches of the eleventh and twelfth centuries to have four, six, and even more. The influence of this enthusiasm extended to Italy, where the church of San Abbondio at Como, for instance, and even the southern cathedral of Molfetta are examples of a pair of towers flanking the choir. "The Germans and Flemings," complains an old French writer, "have big [bells] and a great many of them: this comes of their small politeness." Certainly the ringing of bells harasses the ears of travellers in Germany and the Low Countries, but

fondness for this will not account for the seven towers of the picturesque abbey of Laach or of the cathedral of Limburg on the Lahn ; for the people of Ghent or Bruges manage to get all the noise they want out of one belfry. The variety of mediæval bell-towers is great ; their design shows the delight their builders took in them. Viollet-le-Duc has said that the church towers are the touchstone of the imagination of architects in the Middle Ages. In France the builders were less lavish of them than in Germany, though the representations of the huge church of Cluny indicate seven ; there was apt to be but a single one or a pair, on the façade or at the side. Often a great tower over the crossing was the only one, and this was also a common feature in Lombardy. But the French builder took infinite pains with them, especially when there was but one. While the composition of his interior was rigorously subjected to the plan of his vaulting, the play of fancy and range of invention in his towers was surprising : nothing better shows his skill, his resources, and his grace than the towers he set on his churches, even small churches, in the eleventh and twelfth centuries. Richly elaborated belfry stages, high stone roofs that grew into spires even before the pointed Gothic set in, pinnacles and shafted canopies at the junctions, picturesque dormers, all these belong to the Romanesque of France, espe-

cially to Normandy, where the central tower was always a favorite, and in the middle provinces, where the spire was an early growth. In Germany, on the other hand, where number seems to have been preferred to elaboration, the types, though vigorous and effective, were restricted. Plainer shafts, square, round or octagon, or both or all clustered together, simple groups of windows, high roofs of wood, conical or pyramidal, broken only by dormers if at all, distinguish the German church towers. Combinations of these different elements give the varied picturesqueness that pleases the traveller on the Rhine and in Germany. But alike in both countries the outside effect of the churches was concentrated in the towers. They are the direct embodiment of that aspiration for upright lines and loftiness of expression whose growth we can trace through all the progress of mediæval architecture from the eleventh century to the fourteenth, which culminated in the soaring vaults and spires of Amiens, Beauvais, and Cologne, and which died in the excesses of the fifteenth century. Yet this upward aspiration did not, during the life of Romanesque architecture, become a dominating influence as it did in the thirteenth century. The Romanesque was, to the end as in the beginning, by virtue of the conditions of its birth, the architecture of walls and masses rather than of lines. Breadth of surface was its characteristic. Italians

and Germans appear to have been too fond of this characteristic to surrender it willingly in favor of a Gothic predominance of lines. The Italians in practically refusing the Gothic while they nominally accepted it, kept the character of the Romanesque. The Germans clung to the Romanesque for the better part of a century after the French had made the transition into the Gothic, but in the end they surrendered frankly, and even outdid the French in the final wiriness of their style.

VIII

Sculpture had been the prevailing decoration of Greek architecture; Roman had been almost incrustated with carving, in its more elaborate examples. The early Christian churches in Italy had been utterly bare of sculpture, though those in the East, at least those which remain for us to see in Syria, were liberally adorned with it. We saw how the fancy of the Christian builders, denied or refusing an outlet in sculpture, found expression in lavishly covering the church interiors with mosaics. But this kind of decoration, which centred in two or three important cities—Constantinople, Ravenna, Rome—was a costly specialty, and seems not to have continued, except where Byzantine or classical influence lingered. The Romanesque builders hardly used it, possibly because at

first it was impracticable for them, and when they could decorate at all their fancy was led in another direction.¹ The early Christian builders could get along without sculpture; the capitals of their columns, the only really indispensable pieces of carving, they took as they found them. The Romanesque builders, left to their own resources, worked out their own sculpture from the beginning. The indispensable capital was a permanent school for them; they wrought at it patiently and with unflagging invention for three or four centuries. On the capitals and the elaborate doorways their sculpture was mostly concentrated, and the chief ornaments of the doorways were still the capitals. The variety of forms which the sculptors invented for them was inexhaustible; but as in other parts of architecture so in this, the mediæval artists found a treatment as far as possible from the classic. The sculptured classic capitals, of which the Corinthian was the type, had assumed the shape of a bell about which leaves, volutes, and other independent ornaments were arranged. The characteristic type of Romanesque capitals, when they were not more or less directly imitated from the Corinthian, was quite opposite. Until the time of transition into Gothic drew near

¹ The mosaic in the apse of San Ambrogio at Milan seems to belong to the oldest part of the construction, dating, it is thought, from the ninth century, and is not Romanesque.

in the latter half of the twelfth century, most of them kept through all their variety the semblance of their constructive type, which was a block of stone, approximately cubical, narrowed or chamfered or rounded off below to meet the shaft. In this block, whose underlying form was rather emphasized than dissembled, the ornament was sunk, displayed by cuttings which left it standing at the original surface. This gave the purely constructive type of capital, ornamented by surface carving which did not disguise the natural shape more than do the corrugations of a walnut. In the classic sculptured capitals, the Corinthian or Composite, the true capital, the bell, could be displayed only by stripping off the leaves and ornaments which wrap it round. Nearly all the capitals of the Romanesque are of this incised constructive form unless they are imitations of the Corinthian. Mr. Ruskin has said, indeed, in his uncompromising fashion, that there are not, and never can be more than two orders of capitals, the concave and the convex, meaning these two classes which I have indicated.

The most elementary form which these capitals take, perhaps the most typical, is the cubic cap, called in German *Würfel-capital* (*die-capital*), in English often the cushion-capital. This, which is the father of a large family, consists in its simplest shape of a square die with its lower corners

rounded off, usually in a sweep that makes each face semicircular below, or nearly so. It belongs to the whole range of German Romanesque, in North Italy, in Germany, in Normandy and England as well. The undercut corners, or the lateral faces, or both, are subject to an endless variety of ornamental carving, which sometimes obscures the original form. It is the most direct and natural shape possible to the simple constructive capital, a rectangular block of stone mediating between the impost above and the shaft below, left square at the top to receive the impost, rounded beneath to meet the shaft. Singularly enough it is to the East once more that we must look to find the beginnings of this characteristic form, as of so many that afterward signalized the Romanesque. If we may trust the accepted chronology, the oldest examples are the columns in the famous building at Constantinople called by the Turks the Hall of a thousand and one Columns, and identified with the cistern of Philoxenos which was built in the fourth century. This type, then, is almost of classic age, passing into the Byzantine and Saracenic styles, as well as the Romanesque; it comes next in longevity and fecundity to the patriarchal Corinthian, whose posterity abounds in every style, and whose race is not yet exhausted. To insist that a feature which is so straightforward a product of mechanical exigency as the

cubic capital must be due everywhere to transmission, would be unsafe; yet borrowing is an easier process than inventing.

The prevailing motives of Romanesque decoration are familiar—the all-pervading interlace, as characteristic of Norse and Celtic ornament as of Byzantine and Moorish, the continuous alternating scroll, the perennial acanthus, and the endless variety of leafage derived from it, the lions and griffins guarding the doorways of the churches and submissively upholding their porches, the eagles, peacocks, and whole fauna of other animals that play among the convolutions of their vines, the grotesquely active human figures that writhe and struggle through them. In Italy, southern France, and the Rhineland, declining as it stretched northward, the influence of Byzantine workmen and Byzantine art is clearly marked. In the south a certain effort for classic balance and elegance and a respect for naturalism temper the Teutonic vivacity. In the north the play of a wild fancy led the artist away from naturalism and from formality. Everywhere in his work are a picturesqueness, a rough humor and fondness for the grotesque, an energy and display of emotion that are as far as possible from the classic qualities of art. But it is all under the dominion of a singularly strong sense of decorative effect. All is put together with an instinct for design like that

of early Greek or oriental art, an easy compactness that almost matches the solid harmony of Egyptian decoration. The study of the symbolism and the didactic purpose of the sculpture belongs to the iconography of the churches, into which I do not enter here. The Teutonic mind was as full of symbols as the Hebrew ; the whole Bible story lay open to the sculptor, the legend and the poetry of his own race were stimulating material, and he had the plastic imagination to embody both.

Men who have studied the Romanesque down to its last development in the thirteenth century are tempted to regret its sudden extinguishment in the transition to the pointed Gothic, as we lament the untimely death of a man who leaves half fulfilled his promise of greatness. We would fain have seen what beauty the perfect skill that was lavished on the Gothic of the thirteenth century would have evoked from the round arches and broad walls of the older style. There have been several attempts to revive it in our time, notably among Germans, who have with reason looked on it as the style of their own race, and by one, the ablest perhaps, among American architects. But it has not prevailed, and most of the attempts have not encouraged us to think that it suits the modern genius. Eyes long trained by inheritance and schooling to the proportions of the orders and all

the peculiar concinnity of the Renaissance do not take kindly to the bold breadth of surface, the wilfulness of proportion, the concentration and vigor of carved ornament that belonged to the Romanesque. We may take the relation of column and arch as a most characteristic and crucial one, varying continually, yet at the best period always with a negligent grace that eludes the modern designer. The proportion of massive impost and slender shaft, the luxuriant spreading capital and clinging base, seem to defy his imitation. It is easy to weave basket-work and twine interlaces, to interweave grotesque birds and animals, to spread out a spiky acanthus starred with drill-holes, such as we see in the south of France or wherever else Byzantine influence was marked. But to combine the breadth and vigor of the old style with the refinement which in the end it attained, to emulate the exuberant fancy and untiring invention of the men who pervaded the churches of the twelfth century with their sculpture—this is not easy. One secret of the difficulty is that Romanesque architecture was a popular art; that the impulse, the religion, and the convictions of whole races were behind it; that the opulence of fancy and invention which suffused this or that great church was the cumulative offering of hundreds of workmen, each an artist in his kind, each bringing his own gift of skill and imagination. Moreover, this architecture, in

spite of its appeal to everyone who is attracted by the picturesque, goes against the preconceptions of those whose habit is formed on other styles, in that it finds its main effort not in accumulation of features and fixed proportions, not in aspiring lines and pointed summits, but, like no other style that we see, in the massing of wall-surface contrasted by dark arches and upright shafts. It is the only style that has set its chief value on what is really the main substance of every building, the wall; and the wall, more than any other part, strange to say, is what the architects of the West have been constantly tempted to dissemble, obscure, and suppress.

THE RENAISSANCE

I

I HAVE noted in a previous essay that Roman architecture was essentially secular, as Greek had been essentially sacred, an architecture of palaces and civic buildings, of buildings intended for ostentation and luxurious living, among which the temples were comparatively unimportant. What was more characteristic, all the innovations, all the advances, were in the service of secular building, and the feature which was the means of them all, the arch, was rejected from religious architecture as it had been among the Greeks. Mediæval architecture, on the other hand, was the child of the Church, the heir of her wealth and her solicitude. All its types were evolved in the building of churches; all its important buildings were churches; the form it developed for them was as typical and almost as obligatory as that of the Greek temple, though its variations were greater. Secular buildings were as inferior in importance and perhaps of as few types as among the Greeks;



CATHEDRAL—FLORENCE
Brunelleschi's Dome



all their details were borrowed from the churches. But the feature which the mediæval builders most exalted, on which the whole development of their architecture was founded, was the very one which had been banished from the religious architecture of the ancients—the arch. Greek architecture and mediæval, then, were alike religious, though the mediæval was as exclusively that of the arch as the other had been that of the beam; but the mediæval architecture of the arch was as characteristically religious as the Roman had been secular. The ethical reason or significance of these contrasts I have not tried to trace. There is no lack of writers whose mission is of this kind. But one characteristic all the ancient styles had in common—they were all aristocratic. The art of Egypt, it is well known, was purely hieratic. It is difficult to trace the development of Greek art in its social relations, but the cities of Greece, even those that thought themselves most democratic, were oligarchies, not democracies; and while it is clear that the Greeks had exceptional artistic gifts, the religious association of their architecture, the fewness and inflexibility of its forms, its conservatism, and the narrow lines of its evolution give it, especially the Doric, a distinctly hieratic character. It did not take the impress of common interests and daily life as their sculpture and painting did. The architecture of the Roman Em-

pire again was the concern of emperors, rulers, and the rich. The people, most of all in Rome, were by their very condition excluded from care of it and probably from direct interest, being either an eleemosynary population, dependent on the largess of the rich or of the state, or else of the artisan and servile class. Roman architecture then, while it was completely secular, was an aristocratic architecture, the architecture of the rich and powerful.

One significant thing we may recall here. In all religions before the Christian the priesthood was a segregated body, in many cases a caste; their business was to serve the worship of inaccessible deities to whom the mass of men had not even the right to offer service. The crowd of worshippers was shut out of the sanctuary, and the worship was vicarious. The priesthood lived in a remoteness which was analogous to that of the gods themselves; the temple was the abode of the god, not the resort of the people. Under the Christian religion worship became the common function of all the faithful, the clergy's duty was to minister personally to all, the churches were built to harbor the whole mass of the people. The clergy was concerned from the beginning to stand as close to the people as possible instead of holding aloof from them; every interest of the Church was the interest of the people; the church building was their common shelter and their common care, often they used it

for their secular gatherings as well as for worship, and sometimes to its detriment. We have seen how under the influence of the monastic orders the convents became great brotherhoods of laborers in which most of the productive work of Christendom was centred, how during the eleventh and twelfth centuries especially, the greater part of their labor went to the building of churches and of other church buildings. History shows how under the rise of the cities and the episcopate in the twelfth and thirteenth centuries the great cathedrals were built with the common prayers, offerings, and labor of all the people of the cities. Architecture was the dominant art of the Middle Ages. It absorbed the popular interest and laid all other arts under tribute; it gathered to itself the fruits of all other productive activities. We may say then that the architecture of the Middle Ages was a popular architecture as none other has been before or since, so far as we know. It represented, moreover, not the individual ambitions, avarice, or luxury of the people, but their most unselfish and unworldly interests, so that their highest producing faculty, their highest criticism, and their highest aspiration went into it.

The art of the Renaissance was in its spirit as sharply distinguished from the mediæval, which it superseded, as in its form, or as was the Roman, which it imitated. If the mediæval styles had

been religious and popular, the Renaissance was aristocratic, and as we shall presently see, it was the child of the learned, of dilettanti. Its protectors were the new despots of Italy, warlike adventurers and condottieri like the Sforzas and Malatestas, or successful men of affairs like the Medici—not, to be sure, an aristocracy of long descent, but such an aristocracy as Italy had after the subversion of the feudal nobility which had sunk away during the thirteenth and fourteenth centuries, and disappeared with the wreck of the power of the German emperors in her. It was in nowise the product of the people, who had to be educated to receive it, in nowise an evolution from the style which the people were practising when it was introduced. It was as far from being religious as from being popular; its strictest opponents were the regular clergy, that monastic clergy in whom were centred all the conservatism of the Church. All its associations were secular, from its Roman days to its latest; it would be difficult to find in history a more irreligious class than the petty despots who were its promoters, and the worldly prelates who were the secular clergy of its time, or sacred buildings which were less the embodiment of pious zeal than the churches which it supplied. Its forms and monuments suggest stateliness, elegance, ostentatious splendor, or fastidious refinement, but not the august solemnity of ancient re-

ligions or the humility and devoutness of the Christian. Pageantry, not reverence or sacrifice, is its natural accompaniment. By the time of the Renaissance the people, even the industrial and commercial oligarchies that had ruled the large cities, had lost their hold on government and every sort of public undertaking. Arts as well as politics had passed out of their direction. Architecture, like painting, was in the hands of a professional class, who were themselves the servants of the rich and the powerful. The general public had no longer control of it, and gradually lapsed into that condition of indifference which has been its attitude ever since, and probably had been among ancient nations. We hear of no such popular absorption in the work of building under the Renaissance as during the Middle Ages. We do not read of the people harnessing themselves in crowds to wagons to drag their stones and heavy beams over hills and through rivers, as in the building of the cathedral of Chartres; of the town setting aside a share of its revenue year after year to build its cathedral, as in the great Tuscan cities; of the union of the trades calling the artists of the world into council to build them a church of beauty such as the world had not seen before, as in Florence; of the imposts on provisions appropriated to furnish the cathedral with a tower, as for the Butter Tower at Rouen. There were not in Italy whole

communities of busy artisans gathered under the shadow of the great monasteries, and devoting themselves to building, such as there were in France and Germany in the eleventh and twelfth centuries. The architecture of the Renaissance was in its social spirit and conduct, perhaps unconsciously, as close a repetition of that of the Empire as it aimed to be in its artistic spirit and form.

II

There is apparently a common impression that in architecture at least the Renaissance was a sudden transformation, as when a precipitate is produced by pouring together two chemical solutions; and that the moment of mingling can be accurately determined. But this is not the case. It was as when a vessel of water has been long cooling in stillness to the point of freezing without visible change, and then at a sudden jar the particles all at once rearrange themselves and the mass crystallizes into ice. The change itself was rapid and striking; the influences that led to it were inveterate. If we wish to trace them we must go back to the days of Charlemagne, and then we find that we must look farther still and follow them till we reach Constantine himself, from whose time dates the first divergence from the types of classic art. The truth is that the classic instinct

never died out of the Italians; its persistence shows itself almost as much in architecture as in literature and law. The story of Italy reminds one of some man of strongly marked natural instincts who, turned away from his natural bent by the pressure of active life and companionship, reverts at a later time for good or ill to tendencies that have been dormant through his busy career, and astonishes the world by a transformation that is only the natural outcome of his character—like Tiberius, for instance, or Diocletian in ancient times, or Charles V. in modern.

In the Middle Ages all the northern and central parts of Italy, possessed by Gothic, Lombardic, and Frankish invaders, were given over to German rule, and subjected really or nominally to the northern emperors. They were for the time thoroughly dominated and Teutonised in manners, and fell into the current of Lombard or Romanesque architecture which spread over the middle of Europe wherever German influence dominated. But the invaders had never possessed the coast regions of Italy and the extreme south in the same way, and there the native race had resisted the Lombard style and yielded but slowly to it, in many parts not at all. On the eastern shore the influence of Constantinople contended with the German till the end of the Middle Ages. Rome had never been permanently occupied by any of the

German races, or by their styles of building. Her population had remained comparatively pure, her pride in her old station was undiminished, she clung tenaciously to her old traditions. But her power was the ecclesiastical power of the popes; as a city she sank continually, while all the rest of Italy rose from the abasement of the barbarian conquest; to the civilization and arts of the Middle Ages she contributed nothing. During the Babylonish captivity, as the popes called their exile to Avignon, she became a decadent provincial town, given over to poverty and depopulation, the prey of a handful of disreputable nobles. In Tuscany, too, the population seems to have been always preponderatingly Italian, though Lombard dukes and Frankish counts made haste to establish their rule in it. The people never lost the tradition of Etruscan descent and of Roman empire, but retained always a classic instinct which showed in their building; the Lombard architecture has scarcely left a trace there. Florence—where, as Villari says, though the nobles were of German origin, as were the feudal institutions, a population collected which was principally artisan and Roman by origin and tradition—escaped a change of population by her unimportance and remoteness. Her feeling was all Roman. She pleased herself by tracing her origin to the wars of Cataline, her name to one of the generals who

fought against him; she called herself in her young days the Little Rome. The Tuscan mediæval architecture was a style apart, showing always a certain liking for classic qualities in fondness for flat surfaces of wall, for columns not stretched much beyond classic proportion, and not continued through successive stories, for horizontal lines, and lintels under arches or in place of them, for gables in classic shape tied across like pediments, and an avoidance of great vertical lines or features. The cathedral of Pisa, begun in 1063, the first great work of the style, so far as we know, has these characteristics, which won for it the praise of the architects of the Renaissance, as we may see in Vasari. The lower front of the cathedral at Empoli, which is nearly as old, the very similar façade of San Miniato, and the famous baptistery at Florence show a distinct tendency to continue or resume classical forms. In Rome, neither Romanesque nor Gothic found entrance, except sporadically, brought in by colonies of monks, and there the need of buildings grew less and less instead of increasing. But when about the beginning of the thirteenth century there came a temporary impulse to new building, when for a season the popes enjoyed a little tranquillity and began to restore their buildings under the lead of a group of conspicuous artists, the so-called Cosmati, there was a peculiar revival

of decorative architecture in a classic fashion, though on a small scale, which we may see in the famous cloisters of St. Paul and St. John Lateran, and in the porch added to San Lorenzo fuori le Mura. To this time of revival, which was called by some writers a proto-Renaissance, certain authorities have even ascribed the nave of San Lorenzo and that of Sta. Maria in Trastevere, which are lined with quasi-classic orders instead of the usual arcades.

In Florence the case was different. Her season of prosperity came late enough to save her from being an object of greed or vengeance in the imperial wars, but by the end of the thirteenth century she was too thriving, too progressive, too busy in the affairs of the world not to take up its fashions. The Gothic fashion found its way into her in spite of the underlying classic feeling which showed through her Romanesque. But the same feeling tintured even her Gothic in a variety of ways. It is conspicuous in the habit, retained from the Tuscan Romanesque, of putting the semblance of an entablature between the column and arch in doorways, or the moulded stilt between the piers and arches of the arcades in the cathedral and Loggia dei Lanzi. Though from the end of the thirteenth century to the end of the fourteenth the Gothic style swept over her as over all Italy except Rome, and changed her aspect till the

classical tendency seemed to be buried almost beyond resurrection, yet the Gothic spirit had not taken possession of her. Through the whole peninsula we can see that Gothic buildings are not designed as Gothic builders would have had them, except here and there by imported hands; that the classic love for broad walls and horizontal lines, and even for round arches, shows through all.

As we all remember, the Renaissance did not begin with architecture. It was a great general movement in literature, art, science, a revolution in ideas of life, history, manners, and thought, which was, after all, a direct evolution from the conditions which had preceded it. But for its consonance with the spirit of the Italian people, says Burckhardt, the Renaissance would not have been the inevitable phase in the world's history that it was. The spirit of the Italian people at this time was a complex inheritance from two different peoples—a restless, inquiring, innovating, audacious spirit inherited or imbibed from the northern races, with a distinct gift for expression in art and literature, but profoundly modified by a sense of order and relation which descended from the old Romans, and by constant companionship with the broadly designed, harmoniously finished monuments of both literature and art that antiquity had bequeathed, as well as by a thousand associations in political, legal, social, and

even religious tradition which were of Roman origin. The sense for breadth and co-ordination in which lay the best success of the Roman people and empire, shut out from political expression, found their first outlet in literature, their examples in the works of classic authors. These works, cherished in the monasteries and schools during the Middle Ages, were made accessible in larger number by constant discoveries in the fourteenth century and after, still more by the exodus of scholars and literary men from Constantinople after its capture by the Turks in the middle of the fifteenth century. The close concentration of political action in the hands of the despots of the fourteenth century had left hardly an opening for most active-minded men of peace, except in the study of literature and law. The fruitlessness of the career of the scholar in politics, the rewards which he could win by restraining himself to literature, are well illustrated in the life of Petrarch, who may be considered the herald of the Renaissance. No wonder that uncloistered men of letters, like him and his followers, revolting from dialectics and the third or the thirtieth dilution of Aristotle, with the zest of a new sense for freedom of thought and beauty of expression, should fall to worshipping the works of Cicero and the Roman poets. No wonder that the worship should spread and absorb the whole class of secular scholars,

stimulated as it constantly was by the discovery of new authors, and seconded by the ineradicable inclination of the Italians to all things classic. No wonder that it should come presently to include all the forms of classic art, finding in them the same qualities of balanced harmony, of measure and grace which made classic literature admirable. For the first time since the Empire, the connoisseur reappeared, like the fastidious dilettante Niccolò Niccoli of Florence, who filled his house not only with the collection of precious manuscripts which now adorns the Laurentian Library, but with every kind of classical bric-à-brac, examples of the lesser decorative arts of Rome.

The Renaissance had it in favor of its success from the beginning that it enlisted the rich and the powerful, as well as the learned. It became the fashion, and imprinted itself upon the arts by force of patronage. That is, the style of the Renaissance did; its spirit was in the nation, and would surely have made itself conspicuous in some change or striking outgrowth of civilization. But its classic aspect was forced upon it of set purpose as a fashion, and though the spirit was in the people, it was chiefly in those who were socially at the top by birth, or who by virtue of the possession of it forced themselves to the top. The common people did but reflect it in their handiwork, as was natural. The despots, petty and great, who had

won control of the Italian states, and who no longer needed to give themselves over to a life of warfare, made it their means of distinction. They surrounded themselves with the scholars, poets, and artists who were illustrating the arts and letters of antiquity. They sought pre-eminence as patrons, connoisseurs, and even as scholars. The Renaissance had permeated the air of Italy before it infected its architecture.

III

Florence was the cradle of the Renaissance, Rome was its school, Lombardy and Venice were its playground. The passion for studying the literature and art of Rome inevitably brought with it the passion for imitating them. The first effective beginning of it was in Florence, which in the fourteenth century became the most progressive city in Italy and the most alive, the very focus of the best activity, commercial, financial, political, literary, and artistic. The band of literary men who gathered in her to follow the lead of Petrarch and Boccaccio—Niccoli, Manetti, Bruni, Salutato, Latini, Leonardo of Arezzo, Poggio, Thomas of Sarzana, who as Pope Nicholas V. carried the impulse of the Renaissance to Rome—all these spread the flame and set Italy on fire with it. The story of Petrarch and his friend Colonna sitting on the

.Colosseum and mourning over the fallen monuments of Rome is a familiar one, as is that of Rienzi's deciphering and theatrical proclamation of old inscriptions of the city. There is no indication, it is true, that either Petrarch or Rienzi cared anything for Roman monuments as works of art; but it was not a long step from the literature of Rome to her art, and at an epoch of exuberant artistic activity it was impossible that zeal for the one should not soon come to include the other.

We may call the famous competition for the new doors of the baptistery at Florence in 1403 the signal for the Renaissance in art. After his disappointment in this competition Brunelleschi, who had imbibed the prevailing spirit of worship for the antique, and was beset, moreover, with the idea of the greater competition for finishing the cathedral, which had been left without its central cupola by Arnolfo a century before, went to Rome determined to prepare himself by study of the remains of the imperial architecture there. He was the first person, so far as we know, who gave himself systematically to this study of antique buildings; it engrossed him for some years, during which he examined, measured, and carefully recorded all the remains of antique building that he had access to. When he returned he came prepared for the competition of the cathedral, full of ideas and great projects for the revival of classic

architecture. His appointment as architect of the Duomo set the seal of a great success on the new movement, and made him the representative architect of Florence. All the greatest buildings of the time gravitated naturally into Brunelleschi's hands. In his greatest work, the dome of the cathedral, the exigencies of the constructive problem seem to have governed his design. There was no Roman precedent for such a dome, and it is only in some of the subordinate details that his classic predilections appear. The less exacting designs that he executed while this was going on show how entirely he broke with the traditions of his day. The little chapel of the Pazzi, built in 1420, where small domes on pendentives above round Roman vaulting are carried on a Corinthian order, made an epoch by the novelty and grace of its design, and is still a delight to architects. Before his death in 1446 he had built the great church of San Lorenzo, the hospital of the Innocenti with its graceful arcaded loggia, had begun the Pitti Palace, and left a design for the church of San Spirito which was carried out after his death. There is some reason for believing that he also planned for Cosimo dei Medici the Riccardi Palace, which was built after his death by Michelozzo. Perhaps the most striking example of the originality of his conceptions and the classic feeling that underlay them was the great round



SAN SPIRITO—FLORENCE
Brunelleschi's Order



church of Santi Angeli, which also was left to be built by his successors from his plans, but was only carried a few feet above the ground, and whose dishonored remains, hidden among the houses of Florence, are unseen by most travellers. Brunelleschi's influence turned the course of architecture in Florence. The second great apostle of the Renaissance, Alberti, had already appeared in Florence, had visited Rome to study as Brunelleschi had studied, and to collect the knowledge which he embodied in his treatise *De Re Ædificatoria*. He devoted himself to the study of Vitruvius's book, which had been discovered in a convent by Poggio on his journey to the Council of Constance in 1414, though we have no evidence that Brunelleschi had seen it. By the middle of the century the new style had spread to other important cities in Italy. Brunelleschi himself had carried it to Milan, Mantua, and Ferrara, his disciple Michelozzo to Venice, Alberti to Rimini. Bernardo Rossellino had learned the trick and was joined with Michelozzo in finishing the lantern for Brunelleschi's dome. In 1450 Thomas of Sarzana, now become Nicholas V., the coryphæus of the men of letters of the fifteenth century, summoned Alberti and Rossellino to Rome to undertake the building of the great new church of St. Peter, and from this time the Renaissance took possession of the architecture of Italy, as it had before of her literature.

If the Renaissance was, as I have said, a fashion in literature, it was more stringently a fashion in architecture. For whereas before the Renaissance Italy scarcely had a literature, she had an abundant and vigorous architecture, the luxuriant growth of five centuries since she had begun to recover from her invasions. Her builders were busy practical men, absorbed in their own traditions, working in an established style with the accumulated skill of many generations. The introduction of the Gothic style into Italy had been a fashion, it is true, but it was a fashion born in the regular development of architecture. It was the builders of the north who had conceived and worked out all that was vital in that style; it was the logical outcome of the Lombard Romanesque which had been developed alike in Italy and in Germany. It was at least a strictly professional importation into Italy, brought in by builders themselves, by the Cistercians in middle Italy, in Casamari and Fossanova for instance, elsewhere by specially imported masters from the north, in Vercelli, Milan, Assisi. Received rather slowly by the Italian builders, it had been gradually amalgamated with the native styles, modified by native prejudices, and consolidated into a manner which was at last very different from the northern style and distinctly Italian. The builders had not had to give up their traditional ideas of construction and com-

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position, to accept any radically new theories, or conform to an essentially new taste. They had only to adapt certain new motives of decoration to their old forms of buildings, and they did it of their own election, not under any outside dictation. To have thoroughly adopted the Gothic of the north they would have had to do much more, but they stopped with this, and their Italian Gothic was only Italian Romanesque dressed out in Gothic detail.

The classic revival, on the other hand, was not extended to architecture by men who were bred to building, but by men who were attracted into it from outside, by amateurs who came with a mission of reform. Artists they were, but not architects. Brunelleschi, who was first a goldsmith and then a sculptor, did not begin his career as an architect till he was more than forty years old ; we have seen that he was tempted into it by the problem of putting the dome upon the cathedral of Florence. It was only by virtue of a commanding genius, an unequalled opportunity, a tact and persistency that overbore every resistance that he won and held his place. Alberti was an aristocrat, a scholar, and a genius as well, but never a thoroughly qualified architect. Beginning as a man of letters, then a painter, and at last in the mere swing of his orbit brought round to architecture, he was carried into his position of a leader of the Renaissance

only by his own individuality and by being on the crest of the wave of a great new movement. The two were in fact enthusiastic amateurs without habits or prepossessions that bound them to old ways of building; their only restraint was in their imperfect knowledge of what they had to do. Brunelleschi had no guide but his own observation and instinct; Alberti found Vitruvius to give him a clew to the scheme of classical design which he was eagerly searching out. Both felt from the beginning that the secret lay in first subjecting one's whole composition to a scheme of carefully combined proportions, and in adjusting every part in harmonious relation to this. It was what Alberti meant by his much quoted phrase, "*tutta quella musica*." With the help of Vitruvius's precepts, which were perhaps more transparent to him than to us of to-day, and by comparison with his measurements of Roman monuments, he deduced a system of minute proportions which he embodied in his treatise, and it must be said that by virtue of it he came nearer than any of his contemporaries, in his façades for San Francesco at Rimini and San Andrea at Mantua, to that look of classic authenticity at which he aimed.

IV

The central task of the architects of the Renaissance was to bring back the classic order in its supremacy. This meant a radical change not only in the forms employed in building, but in the conceptions and feeling of the builder. It was not only a reversion from the architecture of the arch to that of the lintel and entablature, and an exchange of the decorative forms of mediæval art to classic; it meant also a revolution in artistic habit, in the sense of the relative importance of parts, of proportion and adjustment, that guided the designer in his work; and this, as he knows, is a more fundamental revolution than the other. It meant nothing less than a change of heart in the artist. No wonder that this went on somewhat slowly; in the ordinary course of human development it would have cost as many centuries as the generations that were actually occupied in it. But it was helped by an extraordinary coincidence of changes in the life of Italy, by an extraordinary advance for the moment in political stability, repose, accumulation of wealth, and luxury of living, and at the same time a metamorphosis of taste in literature and art which was really sudden. Only such causes, with the appearance of a new class of leaders backed by authority, wealth, and the at-

traction of a new fashion could have carried it through. It needed also a community active-minded, progressive, with a natural tendency to expression in art, and an underlying sympathy with the direction in which the movement was made. Such a community with such a sympathy was found in Florence in the fifteenth century.

There are many indications that the new movement met opposition, instinctive and perhaps unconscious where it was not deliberate. The convent-bred clergy, the democratic and conservative body in the Church, the godparents of the Romanesque architecture in the north, doggedly resisted the whole Renaissance movement from the first. They saw in the beginning that its literature threatened their spiritual authority; they accused it, not without reason, of immorality and impiety. It was not natural that they should see with patience the contemptuous setting aside of mediæval architecture, the daughter and the glory of the Church. It did not make the new style more welcome that it was favored in Italy by an aristocratic and worldly secular clergy. The clerical opposition was not confined to the monks or to the beginnings of the Renaissance. Two attempts were made to finish the cathedral of Milan in the new style, one when Brunelleschi was called in 1430 to consult about the building of the dome, another a century later when Pellegrini began a

neo-classic façade; both attempts were frustrated, and it remained for Napoleon to introduce discord into its harmony. But the friction of the styles showed itself also in a different way. Outside Tuscany, and wherever the mediæval traditions of building were strong, though the new style made its way fast, it was by admixture with the old, not by at once displacing it. The change appeared first in the ornament of buildings of the old proportion and design. Classic details, taken from the lesser decorative works of Roman art, cippi, candelabra, vases, or monuments like the so-called Arch of the Silversmiths or Goldsmiths at Rome, are naïvely interpolated into unclassic compositions—finely wrought arabesques, capitals and consoles, string-courses and cornices of classic profile, delicate pilasters, pediments and small orders, refined away from the robustness and self-assertion of the classic types, a great profusion of surface ornament and surface color. The builders and artisans could not at once surrender themselves frankly to the new mode. This is specially characteristic of Lombardy in the fifteenth century, and of Venice, where the Byzantine feeling for polychrome material and surface decoration lingered long. We see it in Fra Giocondo's famous loggia at Verona, in the oratory of San Bernardino at Perugia, in the church of Sta. Maria dei Miracoli, the Dario Palace and other works of the

Lombardi at Venice. There was in this transitional work of builders who inherited the mediæval feeling, a charm of abundant fancy, of picturesqueness, grace, and freedom that has delighted the world. It was short-lived; the inevitable progress of the revival swept it away and it gave place to a classic formalism.

In Florence, where the remnant of classic taste provided a natural *milieu*, where the leaders were not builders, and where the literary impulse of classicism was already dominant, the style grew differently; there was no transition. Brunelleschi and Alberti, the Peter and Paul of the Renaissance, were fully absorbed in the new, with no habits or prepossessions that bound them to the old. The sense of the proportions on which Roman design was built was, to be sure, only partially awake in Brunelleschi. His lean entablatures and starved orders, the baldness of his details, contrast notably with the freshness and nobility of his ideas and with their classic intention. Both he and Alberti were too intent on their large conception of the architect's task to give their best thought to detail, and, moreover, for lack of training, both were probably incapable of designing it or criticising it finely. They took care that their detail should be classic in style and that it should keep its place unobtrusively in their compositions; but they could not avoid a certain prim baldness that character-

izes their work, nor secure the charm which a free fancy and practised delicacy of handling gave to the detail of the Lombard and Venetian builders. But from the beginning, if the classicism of Brunelleschi and Alberti was imperfect, it was exclusive. In their work was no reminiscence of all the centuries that had come and gone between them and the reign of Diocletian. There was, as I have just said, no transition for them; it was an absolute breaking off, and a fresh beginning.

Bramante, the third of the great classicists, was of a different kind. Coming from Umbria into Lombardy as a painter, he decorated the walls and ceilings of many churches and palaces, and turning naturally to architecture, entered it through a professional door. His earlier buildings, executed in the last quarter of the fifteenth century, show the traditions of the old style mingled with the new, or rather the details of the new engrafted on the forms of the old, in the way I have mentioned. In the choir which was added to Sta. Maria delle Grazie at Milan from his designs, and in many other churches which are ascribed to him in Lombard cities, we see the free handling of classic forms, the crowding of columns and arcades, the exuberance and animation of detail, the picturesque composition, which the Renaissance of Lombardy inherited from her Romanesque. When, moved by the common impulse of the time, and by

the desire to study Roman building at first hand, he came to Rome in 1500, he had passed his flamboyant period ; he was fifty years old, matured and long practised in all the routine of architecture. Here, under the influence of the Roman monuments, he changed his manner completely, turning to simplicity and grandeur of design and to strictness of classical style. The continuation, or rather complete renewal, of the new St. Peter's, begun fifty years before for Nicholas V. by Alberti and Rossellino and now put into his hands by Julius II., gave him his great opportunity. He entirely remodelled the design, giving it the enormous scale and greatness of conception which make it the wonder that it is in spite of all the alteration that has befallen it, even though not a stone that he laid be now visible.

With Nicholas V. the centre of the Renaissance in literature and art shifted from Florence to Rome. Four great popes who held the chair at intervals during the second half of the fifteenth century and the first quarter of the sixteenth—Nicholas himself, Pius II., Julius II., and Leo X.—gave their energy to forwarding it. The greatest men of letters of the time—none were very great, it must be confessed—and the greatest artists, crowded about them, or were compelled into their retinues. Rome, whose abiding influence had inspired the whole movement, now claimed her men, and be-

came the focus of their activity. Her monuments schooled them; her new wealth and worldly activity stimulated them. Bramante's great schemes, and the buildings which he actually executed, seemed to renew the traditions of the Empire. The disciples and followers whom he personally influenced, Peruzzi, Raphael, Andrea Sansovino, and many others, even the indocile Michelangelo, took the tradition from him, carrying it on with fuller knowledge and better trained hands, but with no greater power, and hardly with so high a reach of conception. The renewed prosperity of Rome, the worldly splendor with which the great popes of the sixteenth century surrounded themselves, concurred with the quick growth of the new arts; and the city became again as much the model of the world's magnificence, the leader of its civilization, as it had been in the reign of Augustus.

v

The effort of the three pioneers, Brunelleschi, Alberti, and Bramante, to adapt the forms of Roman architecture to the uses of their century met an obstacle in that combination of the arch and the column which had become habitual in the Middle Ages. Brunelleschi had found the arch joined to the column, and exalted above it; for in Romanesque building the column, though it was

peculiarly petted and put forward on every opportunity, had been still a servant, everywhere dominated by the arch. Even he never went so far as to subject the arch to the order in the Roman fashion. In the Capella Pazzi he had set his vaulting over a continuous order borne by columns. In his great interiors of San Lorenzo and San Spirito, it is true, he followed the method of the halls of the Roman baths, carrying his great arches on blocks of entablature over single columns; but in smaller compositions, such as the loggia of the Innocenti and the cloister of Sta. Croce, he followed frankly the mediæval way, and set his arcades directly on the capitals of columns. This method could not be displaced, by reason of its convenience and naturalness; it remained the ruling one for the arcades of galleries and courts. Its use in the early Renaissance is gracefully and picturesquely shown in the familiar cloisters of the Certosa at Pavia. Indeed, at this period the column was mostly reserved for this use, and in pairs for the ornament of doorways, the pilaster being the general favorite. But Alberti, free as he was from any mediæval prepossession or influence of habit or even of convenience, had a truly classic reverence for the column and the entablature. He felt strongly the dignity and individuality of the order, and urged that while people of moderate station might be content with arcades, distin-

guished citizens should build their loggias with entablatures. Nevertheless, perhaps he found an entablature intractable in a vaulted gallery, for he set the Rucellai loggia on arcades.

The entablature was repugnant to the habits of builders outside of Tuscany and Rome. They had habitually reduced their cornices and horizontal members to great thinness. The multiplied horizontal banding and especially the vigorously projecting cornice of the entablature seem to have gone very much against their grain, and as they began to use them they thinned and flattened them till they were the mere ghosts of classic forms. Cornices and string-courses were to these builders merely the ornaments and borderings of the walls which were to them the substance of architecture; it was not easy to look on these as essential components of a building. Brunelleschi himself, removed as he was from mediæval tradition, would seem to have been influenced by the things he had about him, and could never compass the true robust richness of the classic orders. Alberti, beginning where Brunelleschi had left off, and helped forward by Vitruvius, did hit pretty well their original proportions. In the church at Rimini, which Sigismondo Malatesta filched from St. Francis to dedicate it to a mistress, and which Alberti undertook to turn into a temple, and in his greater church of San Andrea at Mantua, Alberti's

orders have the classic look. Here, too, he took the step which for the first time assured the triumph of the order, by putting the arch under it in the true Roman fashion. After him better trained designers continued the work, the look of rawness which still marred Alberti's orders was refined away, and by the time of Bramante's coming to Rome, in 1500, the proportions both of the order and of the Roman arcade were mastered. The beautiful loggia or open narthex of the cathedral at Spoleto, built at the end of the fifteenth century, which has been ascribed to Bramante but was really designed by the two Pippi of Florence, shows the mastery not only of the order but of the classic arcade that architects had reached at that date, and fitly marks the end of the stage which has been called the early Renaissance.

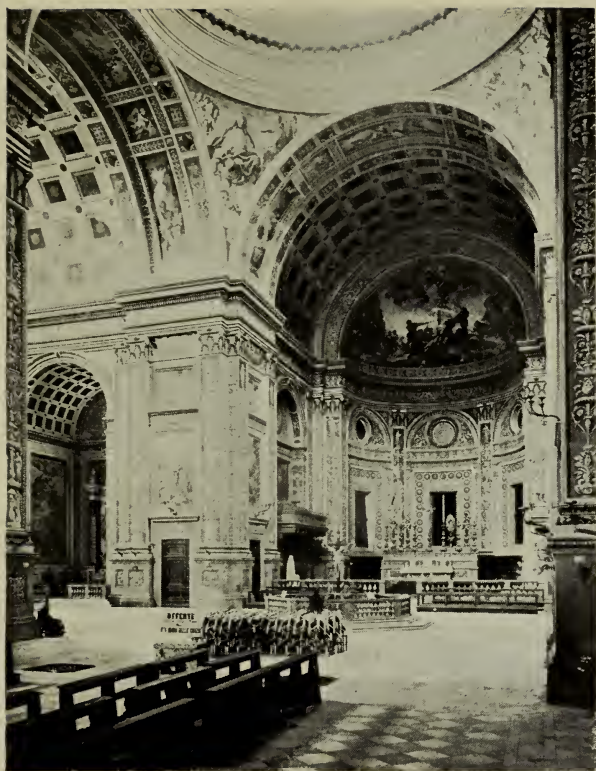
Up to this time the architects' effort had been to adapt classic forms to the needs of the fifteenth century, apparently with no thought that the two were in any wise discordant; it had been the habit of centuries to suit pliant forms to positive requirements. In the north the vault, being the primary constructive necessity of building, had controlled the secondary forms; in Italy men had built what structures pleased them or suited their wants, and had moulded the forms with facile adaptation to them. But now the inviolability of the order had been enforced by the law of Vitru-

vius, by the precept of Alberti, and the practice of his followers. After two generations of artists had spent their powers in deducing as by scientific analysis its immutable types, and in educating themselves to its appreciation, it put on for them a sanctity such as the Greeks had attributed to it. The problem changed; it became the architect's work to devise buildings which would suit the orders that were to cover them. Under Bramante's successors, Raphael, Peruzzi, the Sangalli, Sansovino, Vignola, and the rest, the knowledge of Roman models and the Roman system became clearer, till all was learned from them that could be learned. It was impossible not to come at last to the conclusion that in the most impressive and monumental works of the Romans, the temples and triumphal arches and porticos, the order itself, alone or combined with an arch, was the monument, and that the greater the scale the more impressive was the order. Through the fifteenth century the straightforward mediæval habit of building in obvious stories was maintained, and the order was almost invariably limited to the height of a single story. The uncompromising Alberti, to be sure, had used in San Andrea at Mantua, both outside and in, a single order sixty feet high, covering the whole height of the wall. With the great leaders there had been a steady pursuit of the simplicity of composition and large-

ness of scale that belonged to classic building. The underlying classical idea that a great building was to be designed, not by multiplying its parts, but by increasing the scale of them, was altogether in consonance with the Florentine feeling. The great interior arches of the cathedral show this, and also those of the Loggia dei Lanzi; maturer study of the monuments of ancient Rome enforced it on every student. In their palaces, the Renaissance leaders, controlled by practical conditions, consented to multiply orders and restrain their scale, but there was a constant tendency to increase of scale and toward making a single order the dominating element of a design. Bramante began his work in Rome with the little *Tempietto*, as it was called, of San Pietro in Montorio, in which to the delight of his fellows for the first time since imperial times a building was constructed out of an order and nothing more. The tendency reached its climax in his design for St. Peter's, where he proposed a single gigantic order to cover the whole building, both outside and in, as Alberti had done at Mantua, but on a still greater scale. Antonio Sangallo, coming after, and as if startled by this audacious venture, would have substituted two stories of orders; but when Michelangelo was called by Paul III. to carry on the church, he declared, as the world knows, that Sangallo by multiplying the parts of the building was making a



SAN ANDREA—MANTUA
Alberti's Order



Gothic design instead of a classical, and that every step away from Bramante's intention was a step in the wrong direction. He restored the single order and built it as Bramante apparently intended on a scale which had never been equalled, making it a hundred feet high, and grouping under it the windows of two stories, and in some places of four.

This treatment was too obviously the logical conclusion of a classic revival which had been born of scholarly enthusiasm and educated by pedantry not to prevail. As soon as the single order was exhibited on a colossal scale it convinced and was adopted. It became the prevailing motive of classic design in churches, especially within, where it suits well with their natural ordinance; in secular buildings also it became a habit to put two or three stories under one order, a habit which the world has never outgrown. There is no doubt that the device added grandeur to architecture. It is difficult to believe that St. Peter's and the other great church interiors that were so built would not lose something of their majesty by any other classic treatment. Even the necessity of multiplying stories under the great order tended to give it scale, and prevented its size from being lost in the effect. On the other hand, this combination of several stories in one order was inharmonious and essentially unclassic, a forced union which Greeks

and Romans had never attempted, and hostile to the very simplicity at which the architects aimed. But its stateliness as well as its novelty and its descent recommended it to an age in which kings and princes, rising in power and wealth, were gathering about them a ceremonious magnificence. Its use spread rapidly over Italy, and more slowly over the north of Europe, where in general the new style established itself nearly a century later than in Italy. It produced what has been called the Grand Style, what the French recognize as the Louis Quatorze style, the style in which Philip II. built the Escorial in Spain, the style of Inigo Jones and Wren in England. It was the outcome of an overstrained effort to retrace a past art, to apply its unyielding methods to the obdurate requirements of a new life, to do as the Romans did under conditions which the Romans never met; it was Humanism in architecture, the *reductio ad absurdum* of the Neo-Classic movement.

VI

Meanwhile the study of the formulæ recorded by Vitruvius and enforced by Alberti became closer. Vitruvius's book was made the Koran of a new faith. The great architects of the sixteenth century — Vignola, Serlio, Scamozzi, Palladio — turned law-givers and each wrote his treatise, ex-

pounding Vitruvius, or propounding their own system of measures, prescribing the proportions of every part of the order with wonderful minuteness. Thus they labored, as the Romans had in their day, to reduce the elements of architectural design to a system in which they could be freely handled, arranged, and rearranged like blocks in a geometrical mosaic. Only in this way, perhaps, could these men have accomplished the immense amount of work that they produced; only in this way could the individual have left his mark on it in every part as he did, by making every part exactly repeat every corresponding part.

It ill becomes those who walk in the footsteps of others, said Michelangelo, to claim that they go beyond them. Nevertheless, it is but just to say that the architects of the Renaissance were greater artists than those of the Empire. They stood socially, and probably in attainment, on a higher level; they assumed to go beyond even the range of acquirement which Vitruvius marks out for his model architect. For they were educated in the best fashion of their day; many of them were the companions of princes and the favorites of cultivated courts. Lorenzo dei Medici maintained, we are told, that aristocratic birth favored the artist's perfection, and that poverty was a hindrance to inspiration. The aristocracy of the Renaissance

was a mushroom aristocracy, it must be confessed, as the Medici were, but its culture and its aptness for art were higher than those of the Roman patriciate; and they were reflected in its arts. The constant aim of the artists was for perfection, as they conceived it, just as the Greeks whom they revered without knowing them had aimed. If their work had not in the same degree as the Greek its splendid and serene dignity, or that high fineness which the French call *spirituel*, these men did bring back in a new shape the refined richness and delicacy which distinguished Greek architecture from Roman. All the ornament of their buildings was studied with a fastidiousness which the Roman had not known. It had the charm of a vitality that had gone out under the Empire. They invented a hundred new details which found places naturally in their architecture, and a whole school of rich and delicate carved ornament which took its color from the Roman, yet excelled it as the rose excels the peony. Though they avoided the Gothic system of construction, or dissembled it as in the great domes of Florence and St. Peter's, mediæval vaulting provided them a great store of new expedients for covering interiors, vaults of a great variety of shape, and especially the dome on pendentives which set the keynote for their most magnificent designs. Their architecture surpassed the Roman in beauty and re-

finement, if it could not outdo it in stateliness and richness.

But, as we have seen, the struggle for perfection of form ended in formalism ; and of this, however elegant it had become, architects soon tired. The bonds had scarcely been drawn tight when they burst. Men flung away the perfection almost as soon as they had attained it, as if it had disappointed them. A general *débâcle* followed. The desire for freedom and novelty revived, and soon ran into a wild license. Invention was stimulated afresh, but the material with which it had worked was exhausted ; the principle which had guided it was gone. As men gave up the pursuit of a definite ideal, the clear perception which the pursuit had nurtured died out. They began to handle with recklessness the classical forms that had hitherto been treated with almost superstitious reverence, and which under such handling quickly lost their beauty. First came the misappropriation of details, the careless breaking of lines, the degradation of ornament which mark what is called the Barocco period ; then followed all the reckless extravagance of the Rococo. The revival of architecture had had the familiar career of aspiration, achievement, and decadence. There had been the delicate fugitive charm of the early Renaissance in the fifteenth century, the inspiring growth and mastery of what has been called the

Neo-Classic in the first half of the sixteenth, the frigid and elegant formality of the Grand Style in the second half, the picturesque license of the Barocco in the seventeenth, and at the end the recklessness of the Rococo.

The Renaissance movement was an effort to restore what was believed to be the one true form of architecture, to continue the interrupted tradition of the greatest age of the world ; but in one respect it was the greatest innovation in art which the world had seen—it made architecture a thing of arbitrary fashion instead of a natural product of the people, a thing whose form, progress, and changes, instead of being a natural evolution, were now for the first time dictated from without by a company of self-elected rulers, of amateurs and dilettanti. It was one part, and not the leading part, in a still greater movement, set on foot by literary enthusiasts but seconded by the instincts of all Italy, to change the aspect of civilization and bring back the antique glory of the pagan world. Artificial as it was, it could hardly have succeeded as it did in a living and practical art like architecture, if it had not had the impulse of the world behind it.

There is no doubt that the Renaissance at its best was superior to that decaying form of Gothic which it displaced, as it was superior to the Roman which it reverently imitated ; but to it be-

longs the reproach that it first diverted architecture from the paths of orderly evolution that it had followed since building began, and sent it wandering in that self-conscious search after fashions which it has followed ever since.

SAINT PETER'S

I

THE Church of St. Peter is called the Vatican Basilica, though it is not a basilica, because it was so once; that is, it occupies the site and contains the foundation of the greatest early Christian basilica. At the place where the Vatican hill slopes southeasterly to the bend of the Tiber, where the lowland was crossed by the ancient Via Triumphalis, lay the gardens and circus of Nero, the scene of the earliest and most wanton persecution of the Christians; and here, tradition says, at the end of the first century St. Anacletus, fourth bishop of Rome, consecrated by St. Peter's own hands, built a modest oratory over the tomb where the apostle had been laid after his martyrdom on the neighboring Janiculan Hill. Two centuries later, we are told, Constantine, passing the spot as he entered Rome in triumph after his great victory over Maxentius, in the first campaign that was fought under the banner of the cross, vowed to himself that he would build a church in honor of



SAINT PETER'S
Michelangelo's Dome



St. Peter. This church, built in 324-30, lasted nearly twelve centuries—the most venerated church in Christendom, and in course of time the most sumptuous. It gradually usurped the importance that originally belonged to the Pope's own church, the basilica of St. John Lateran—which, also founded under Constantine, is even now called the Mother and Head of churches—and when in the fourteenth century the popes, returning from their exile in Avignon, transferred themselves from the palace of the Lateran to that of the Vatican, St. Peter's became the pope's chapel.

The chronicles of the Roman Church are full of accounts of its splendors and its vicissitudes, its burnings, its plunderings and restorations. Fortunately, before Constantine's building was pulled down to make room for the present church careful plans were made of it, so that we know what it was; and representations of it may be seen in the Stanze of the Vatican in Raphael's paintings of the Coronation of Charlemagne, which took place in it, and of the Incendio del Borgo. It was a great five-aisled basilica with projecting transepts, nearly four hundred feet long and two hundred and seventy in extreme width. It fronted the east, as did the earliest Christian churches, and as the present church does; its western apse covered the tomb of St. Peter. An imposing flight of forty steps and a broad platform, stretching all

across the front, served the popes as a reception place for the potentates who on great occasions came to visit the church, and somewhere in front, as now, was a balcony from which they delivered their blessings to an assembled multitude. The plain façade was the entrance not of the church but of an atrium, open and lined on all four sides with arcades, enclosing in the centre a bronze fountain for the due purification of worshippers. The arcaded galleries were decorated with painted walls, and the side next the church, serving as a narthex, contained many tombs and mosaic decorations, while on the opposite wall was put later the famous mosaic by Giotto called the "Navicella," which represented Peter walking on the sea, and now, much altered by restorations, is replaced in the present narthex. The main façade, rising high over the atrium, and crowned by a low gable, was covered with splendid mosaics which stretched in bands across the front. There were as now five doors, three in the nave and two in the aisles. The nave itself was enormous, more than seventy feet wide, or as wide as the present nave which follows its lines, a hundred feet high, and nearly three hundred long. It and the aisles were separated by four rows each of twenty-three marble columns, plundered, as were most of Constantine's building decorations, from older structures.

Its unique characteristic was that while the col-

umns that lined the nave carried a horizontal entablature, those that divided the aisles carried arches. This is one of the evidences that although by this time builders had succeeded in detaching the arch from the entablature, and setting it directly on the capital of the column, they still considered the entablature to be the more monumental crowning of the column, and relegated the arch to an inferior place. The same feeling appears in Sta. Maria in Trastevere, built only about fifteen years later, in which the entablature is used, but the frieze of flat arches that take the weight of the wall off the architrave has been revealed by the falling off of the plaster.

If it looks singular that this should be done a quarter of a century after the building of Diocletian's palace at Spalato, in which, as Mr. Freeman has insisted, the greatest step had been taken in the development of Romanesque architecture by the emancipation of the arch from its subservience to the entablature, we may remember that by this time Rome had become the home of conservatism, that not only armies and emperors, but all the impulses of progress were supplied by the provinces, that the determining argument for the substitution of the arch in a time of mechanical decadence was likely to be its ease of construction and cheapness, and that Spalato, where it first claimed supremacy and respect, was within the range of that Greek

influence which was two centuries later to transform architecture in the splendid buildings of Justinian and Theodoric, and which would tempt Constantine away, almost as soon as he was securely possessed of the old Rome, to found a new Rome on the shore of the Bosphorus.

Whatever we may assume to have been the origin of the form of the early Christian churches, we must believe that Constantine's first church fixed the type for centuries to come of those in Rome, except for burial churches—for which, also through his example, another form was adopted—and for some time to come elsewhere. The nave and aisles, the transept not as broad as the nave, the great triumphal arch opening from the nave into the transept, the western apse, transferred to the east when later the orientation was reversed and the churches were entered from the west, the crypt under the apse containing the body of the patron saint, the long arcades, the clerestory, the narthex, the atrium, all were there.

It does not appear that any of these parts were here used for the first time, or perhaps that there was any other novelty in the new basilica than its size, its completeness, and its splendor. Most of its characteristics as a church were probably common in the East, where in the great cities the Christian Church was prosperous and its places of worship conspicuous while Rome was still, from an

ecclesiastical point of view, an oppressed provincial town. It probably had a coffered and gilded ceiling under its timbered roof, like that which Eusebius mentions in his description of the later basilica which Constantine built over the Holy Sepulchre, and it was, at first or afterward, profusely decorated with rich mosaics, both within and without.

Perhaps it was the decadence of Latin art which, already begun, was continued and accelerated during the dreary centuries that followed Constantine's reign, that prevented further development in the form of the Roman churches until veneration for those of Constantine had hardened into conservatism. Perhaps as the Church of Rome grew stronger, and after a century and a half succeeded to the authority of the Western Empire, it clung loyally to the form of its first houses of worship, the witnesses of its elevation. Perhaps the absence of Teutonic blood and of Teutonic rulers like Theodoric and the Lombard kings conspired with the aversion to change which belongs to ecclesiastical government. At all events, the progress of church architecture in the early Middle Ages passed Rome by. The great inventions of the Romanesque period, the cruciform plan, the lengthened choir, the compound bay, the vaulted nave, were not found there. The type of Constantine's basilicas, St. Peter's, St. John Lateran, was contin-

ued with little alteration except in scale from the fourth to the twelfth century, in a series of churches which still remain, though more or less altered. In several of them, as well as in Sta. Maria in Trastevere just mentioned, even in Sta. Prassede so late as the end of the fifth century, and in others which many authorities date later still, we again find a reversion to the entablature in place of the usual arcades of the nave.

So this church stood till the middle of the sixteenth century, a monument to the conservatism of Rome, revered, adorned, wasted, patched, plundered, and restored, but substantially unchanged, except for the clustering about it of many parasitical buildings, that at once disfigured it and served as props for its later decrepitude. It must have been well built, for its situation was insecure. It stood on the alluvial shore of the Tiber, on absorbent ground penetrated by the rising and falling river-water. This unstable substratum was a sore trial to the architects of the modern St. Peter's, whose efforts to make their buildings secure were again and again baffled by it. It is not practicable or very important to unravel the structural history of the building. We do not know when the flat ceiling of the outer aisles was replaced by a barrel-vault, nor when the ceilings of Constantine were stripped from the roof trusses. We know that two towers were added to the front,

not of the basilica, but of the atrium, one by Adrian I. in 772. Two round chapels, connecting with each other and with the south transept, were the mausoleum of Honorius, afterward the oratory of St. Petronilla, and the chapel of St. Andrew. South of the atrium was a small cruciform church with two apses north and south, called the Church of the Saviour, and devoted to the use and the burial of pilgrims, and all about the basilica itself clung a thick growth of smaller buildings, partly identifiable and partly not, which appear on the published plan. As for the legendary furnishings with which the church was resplendent, the wonder of pilgrims and historians in the Middle Ages, they have left no trace. The spoils of the Jewish Temple, transferred from the Temple of Peace, and the accumulated riches of more than a century, were carried off to Carthage by the Vandals, under Genseric, in the middle of the fifth century; the silver doors of Honorius, weighing nearly a thousand pounds, were the spoil of the Saracens in the middle of the ninth. It is almost incredible that, of the later splendors of the church, the accumulation of the secure ages of the Pontificate up to the sixteenth century, nothing should have survived its removal; but this seems to be the case. Whether the cause was the eagerness of Julius II. to raise money for his pet scheme of rebuilding, or the disdain of the

artists of his day for the art of the barbarians, as they called their predecessors, or what else, we do not know; but the magnificent canopy of the confessional, the silver candlesticks and altar rails, the golden plates that lined the confessional and its silver pavement, the bronze tomb with which Constantine had provided St. Peter, and the golden cross that surmounted it, the silver-gilt ciborium, a ton in weight—all these seem to have utterly disappeared. Only two or three relics of especial sacredness and no money value have been preserved: St. Peter's statue and his chair, only one or two works of art which were recent enough to secure the interest of the artists of the Renaissance: the Navicella and the bronze doors of Filarete and Simon the Florentine.

II

The middle of the fifteenth century may be taken as the end of the Middle Ages, and people who like to mark a gradual change by a definite date have fixed upon the taking of Constantinople by the Turks in 1453 as the limit. Then at least ended the Eastern Empire, which had been in a way a symbol of mediæval civilization, as the Western Empire had been the symbol of Latin civilization. Byzantine art and the last Byzantine emperor died together. Gothic architecture in the north

had, it is true, still a century of life before it, more or less ; but the Renaissance had made its way in Italy, architecture following the steps of letters and of sculpture. In Florence, the cradle of the Renaissance, it had asserted itself with a decision and consistency that it was slow to attain in other cities. Brunelleschi had built the church of San Lorenzo, the front of the Pitti Palace, had added his great dome to the cathedral, and had died. Michelozzo had built the Riccardi Palace for Cosimo dei Medici, and the church of San Marco ; Brunelleschi's great successor, Alberti, was at the top of his fame, and Bernardo Rossellino had made himself a name.

The pope at this time was Nicholas V. Raised from a humble position by mere value of character and acquirement, upright, generous, progressive, scholarly, a patron of learning and enamored of the arts, founder of the Vatican library, he came to the papal chair in 1447. The stormy pontificate of Eugene IV. had ended ; the schism which he had provoked died with him, and was buried two years later at the abdication of the antipope Felix V. For the first time in many years the Holy See was at peace. The Renaissance was in the air ; but no building of importance had been undertaken in Rome for half a century, and the new style was represented there only in the restoration of some of the older churches, so far as we know.

Nicholas was a great builder, and Rossellino was his favorite architect. He summoned Rossellino from Florence, and set himself seriously to embellish Rome. He undertook, says Vasari, the restoration of many churches and especially of the principal basilicas. But his great undertaking was the rebuilding of the suburb of the Vatican, commonly called Il Borgo Nuovo, where were his own church of St. Peter, and the comparatively new palace which the popes had occupied since the return from Avignon. For this Rossellino planned a great scheme, which apparently did not differ very much in its main lines from that which was afterward carried out either by design or by natural growth. Three great streets, lined with arcades and shops, were to converge upon a great open square, beyond which was an advanced portico, next an atrium with a fountain, flanked by colonnades, then another portico, and then the church. The palace was to be rebuilt on an enormous scale, enclosing courts and gardens, and containing not only the pope's own residence and that of his cardinals, but sumptuous lodgings for visitors, churchly and royal, with chapels, library, *loggie*, and even a theatre for their amusement. The nucleus of the whole project, or at least the part that was first undertaken, was the design for the rebuilding of St. Peter's. For this Alberti was called into council. He had come to Rome,

and was employed by Nicholas to restore the aqueduct by which the Aqua Virgo had been brought into Rome by Augustus, and designed for it the fountain of Trevi, afterward altogether remodelled by Salvi in 1735.

The old basilica, we are told, which had stood through the storms and sieges, the conflagrations and plunderings, the pilgrimages and ceremonies of eleven hundred years, and survived the reigns and accumulated the gifts of two hundred popes and antipopes, and had become the most famous, the richest, and the most venerated church in Christendom, had grown decrepit, and needed to be rebuilt. Whether it would have been thought so if there had not been the temptation of a new fashion we cannot know; at all events it had strength enough to last another half-century without accident, as its history shows. But the old conservatism of Rome was gone or disappearing; a series of pontiffs had begun who had no tenderness for the traditions or the relics of Christian art, who were men of their own day and generation, prepared to lead the way in throwing over the forms of mediævalism, and reverting to the classic in art, literature, and even in thought. Nicholas determined to build a new St. Peter's, which should be greater than Constantine's church, and more splendid than Solomon's temple. The year of Jubilee 1450 arrived, and the work was

begun. The new church was to follow the lines of the old, to preserve the same orientation, fronting the east, but to be longer at both ends. The sacred martyrium, or confessio, over the grave of St. Peter was to be undisturbed, the old church remaining as long as possible while the new one was built up about it, and the foundation was laid for a great apse behind that of the basilica.

The tranquillity in which Nicholas began his reign did not last. The fall of Constantinople followed in three years, and Nicholas, stimulated by the appeal of Æneas Sylvius, who afterward became Pope Pius II., began enthusiastically to preach a new Crusade. The last years of his pontificate were disturbed by political conflicts like those which had made the reign of his predecessor turbulent, and which were to occupy the attention and revenues of his successors for the next fifty years. In 1455 he died; the building of St. Peter's was discontinued, and for the rest of the century the walls of its apse stood nakedly a few feet above the ground, while the old basilica maintained its place and rank.

Unfortunately the designs of the architects have not been preserved, nor is there anything to indicate what share Alberti had in them. Rossellino's name has always clung to the beginnings of the new St. Peter's. The charge of the build-

ing was put into his hands. He did an immense amount of work in restoring old churches both in and out of Rome, chiefly for Nicholas, but his great designs died with his patron. He was an experienced builder, and it is likely that Alberti was joined with him as a consulting architect on account of his skill in the new fashion, and because he was a commanding figure, like Nicholas himself, among the men of literature and art in Florence. Vasari, indeed, says more than once that Alberti would have succeeded better if he had had more practical knowledge of building. But he was one of the brilliant figures of the Renaissance, a type of its leaders. He was a noble and a churchman, learned and courtly, an amateur of all the arts, a writer, an enthusiastic student of ancient art and literature, and of all the learning of his day. He was an enthusiast who had come to architecture from without, flushed with a gospel which he was eager to embody in it. If he had not the genius of Brunelleschi, he had at least a rare talent, a keener sense, native or educated, of proportion in mass and detail, the same indefatigable diligence in studying and measuring all the remains of ancient architecture that he could get access to. He missed, and probably could never have attained, the delightful naïveté and unconstrained elegance that we have recognized in the Renaissance of northern Italy. But he

anticipated the stately consistency of style that belonged to the next century, and the detail of his façade of San Francesco at Rimini is almost classic enough for Vignola or Serlio. At the time when the luxuriant façade of the Certosa was going up at Pavia, there was building at Mantua Alberti's greatest work, the church of San Andrea, which, nevertheless, the late Mr. Street was willing to describe as a "hideous classic edifice tacked on to a most beautiful brick campanile." It is a church that might have been designed by Palladio or Alessi a century later, and in which, as we may see hereafter, many of the characteristics of St. Peter's are prefigured. It is interesting to watch in his work the growing idea of largeness of scale, of the predominance and sufficiency of a single order, which Brunelleschi and Alberti both recognized, and which Alberti embodied in San Andrea as fully as it was afterward embodied in St. Peter's. The preference for the entablature and the subordination of the arch Alberti carried so far that he insists in his book that arches shall always be borne on pilasters and that nothing but an entablature shall rest on a column. Accordingly he, like Brunelleschi, followed the Roman habit of inserting under the arch, when it bears on a column, the fragment of entablature which is so offensive to many modern critics, but which made its way among later architects until Milizia

could say: "It would be ridiculous nowadays to urge the importance of this principle, which is known even to children"—a saying which deserved the attention of the late Mr. Freeman.

How far the first design of St. Peter's was influenced by Alberti's knowledge, which was doubtless greater than Rossellino's, or by his principles, it is impossible to judge. Whatever might have been made of the church if it had gone on under their care, it was probably begun in the undecided style of the early Renaissance, for it was begun before Alberti's style had matured. The façade at Rimini, which first shows a mastery of his new style, was not begun till ten years later than St. Peter's; and San Andrea, which alone shows his fully developed power, was ten years later still, and finished after his death. Nevertheless, the fact remains that the great church of Rome engaged the service of three men who were, after Brunelleschi, if not the best architects, at least the greatest leaders of the Renaissance—Alberti, Bramante, and Michelangelo—and if we compare it with San Andrea we shall perhaps conclude that it embodies, however they may have got there, as many characteristic ideas of Alberti as of the others. But when Nicholas died, Alberti went back to Florence, where he was already building the Rucellai palace. Rossellino also returned, soon to be summoned by Pius II., the second great

humanist pope, to build up the new city of Pienza, which consumed all of Pius's architectural zeal. Of the great scheme of Nicholas for restoring the glories of ancient Rome nothing is left to us but the idea, which was the inspiration of his successors. Paul II. made some ineffectual efforts to carry on the work. Sixtus IV. was too busy with buildings of his own devising to continue it; the other popes of the fifteenth century had their hands full of political cares and expenses; the church lay neglected for fifty years.

III

It is a well-known story how the magnificent Julius II., having ordered his tomb from Michelangelo, cast about for a place to put it; and how Michelangelo, who had designed the tomb on a scale that outdid everything else of its kind, hit upon the unfinished apse of Nicholas V. as an adequate shrine for it. The pope took fire at the suggestion, and calling his architects into council determined to take up the project of Nicholas, and rebuild the church of St. Peter, which still stood untouched. He had about him the two Sangalli and the veteran, Fra Giocondo. Bramante had lately come to Rome with the same impulse that had brought Brunelleschi and Alberti, in the fulness of his Lombard fame, and had already distin-

guished himself there by some lesser works. He soon came to the front by natural selection—Vasari says, by dint of his own skill in putting himself forward—and the undertaking passed into his hands. Pope and architect attacked the work together with an impetuosity that was common to both, Julius raising money for the building by the sale of indulgences right and left, Bramante making haste to begin pulling down the old basilica, as if to make it impossible to delay the new. It had been the cardinal condition from the very beginning that the confessio and tomb of St. Peter should be left undisturbed, and that the high altar of the new church as of the old should be set over it. Rossellino's apse had been built to conform to this idea, and Bramante's plan was adapted to it. His boast has become familiar that he would set the dome of the Pantheon upon the arches of the Temple of Peace, of the building, that is, which we now know as the Basilica of Maxentius or Constantine. This was not merely a figurative boast, but a literal intention, as its issue proves; for the lines of the nave of St. Peter's are set on those of the original basilican church of Constantine, which were also, as we have seen, the lines of Rossellino's. By a notable coincidence that church and the basilica of Maxentius have the same width of nave, so that the arches which carry St. Peter's dome really match those of Bramante's

“ Temple of Peace.” Moreover, the dome of the Pantheon spans a hundred and forty-three feet, and St. Peter’s one hundred and forty, so that as nearly as practicable dimensions go the dome of the Pantheon really rests on the arches of the Temple of Peace. The actual dome, it is true, is different enough from that of the Pantheon, but that it was not so in Bramante’s intentions is clear from all the records of them that we possess. These show clearly that the soaring outline of the dome as it stands is entirely apart from Bramante’s conception, and that he had intended a low composition of much more classical outline, whose principal mass was a dome not only hemispherical like that of the Pantheon, but somewhat masked like that by a series of steps or benches which encircles its base, partially obscuring its outline and diminishing its apparent height. This shape of dome, indeed, as the work of many architects shows, from the Pantheon itself and Sta. Sofia down to the old Capitol at Washington and the buildings of the Chicago Fair, is that which best accords with the low massing and horizontal lines of classic architecture. So that if we would truly divine the conception which first inspired Bramante and to which he held faithfully, we must go back to that lightly regarded phrase of his, and take it not fancifully but seriously.

The controlling motive of Bramante’s whole de-

sign was his colossal dome—the dome of the Pantheon, but lifted off from its massive ring-wall that needed no buttressing, and balanced high as the very crown of the Pantheon on the tops of the great arches of the classic basilica. It was not to be supported on upright walls like the great dome of Florence, nor standing directly on its four piers, but overhanging by nearly thirty feet at the angles, and poised on pendentives like that of Sta. Sofia, yet it was to be half as wide again as Sta. Sofia's. To prepare for this dome was Bramante's chief preoccupation. He set to work in eager haste. The rear of the old basilica was pulled down, its columns, marbles, even tombs of buried dignitaries, were hurriedly worked into the foundations of the four great piers set about the tomb of St. Peter, over which the dome was to centre. Bramante was sixty-two years old when the corner-stone was laid in 1506. He could not hope to see the end of his work, and, as if to make sure that the essential parts of his design should be unalterably fixed in his lifetime, he hurried the piers so impetuously that by the time the arches were laid on them they already showed signs of being inadequately built. In 1513 Julius died, and Bramante's death followed in a few months, but he had built his piers and turned his great arches: the scale of the church was fixed—the width of the nave and transepts, the span of the dome—and has never been departed

from. Towers they are, these great piers nearly seventy feet square and a hundred feet high to the springing of the arches.

On his death-bed Bramante recommended Raphael, his protégé and pupil, to Leo X., who had succeeded Julius, and Raphael was appointed to continue the work. The insecurity of Bramante's masonry, which developed as soon as the building passed into other hands than his, seems to have been good fortune disguised, for whereas Raphael and his successor Peruzzi found enough to do during their brief charge of the building in consolidating the work which was already done, the younger Antonio Sangallo, who followed them, set seriously to work to remodel the whole design for Paul III. Bramante's plans, it would appear, had been either lost or obscured, and though Raphael and Peruzzi had each prepared tentative designs, they had not advanced the building far enough to make important modifications. Paul required that the project which he wished to take up with energy should be put once for all into definite shape, and Sangallo prepared an elaborate model thirty feet long, which cost five thousand golden crowns and is still preserved. The colossal order with which Bramante had begun to decorate his interior nobody had ventured to displace, but Sangallo's design clothed the exterior with two stories of small orders of half the scale and greatly complicated the

plan, so that Michelangelo, calling the design a Gothic one, complained that Sangallo had frittered away the architecture, and cut up the interior into dens fit for counterfeiters. Paul nevertheless accepted the model, and Sangallo prepared for carrying it out by once more strengthening Bramante's piers, filling up the great niches which Bramante had left on their cardinal sides, and also raising the floor of the church. Fortunately these preliminaries consumed the whole of Sangallo's administration, and when he died, in 1546, he had done nothing of importance in changing the arrangement of the building. Bramante's gigantic piers with their lofty pilasters and huge arches, and the walls of his apse behind them, still towered over the mutilated nave of the old basilica, consolidated by the work of three successors, but practically unchanged, as we see by various contemporary sketches which are still preserved. Michelangelo, appointed in 1547 to succeed Sangallo, immediately threw aside all his projects of amendment, saying, as I have quoted in another essay, that every step away from Bramante's intention was a step in the wrong direction. Paul gave him a free hand. He restored the design of Bramante in all its main features, and before his death, seventeen years later, he had given to the work such definite shape that his plan was not departed from till the addition of Maderno's lengthened nave in the next century.

IV

There has been much discussion among students as to the share of the various architects of St. Peter's in the design of the church as it stands, and especially as to Bramante's intentions. Recent researches of Baron von Geymüller have done much to clear up the question. The drawings which he has unearthed, especially one large plan, which seems clearly to have been Bramante's, appear to set forth his purpose convincingly. Whether or not the relations between the dome of the Pantheon and the arches of Maxentius suggested to him the proportions of this plan, it is clear that adjustment to those relations gave him the central space, which is the dominant note of the whole. Evidently the great dome filled the minds of all popes and architects who had to do with the building of the church, as it does the minds of all travellers who visit it to-day. The grand effect of the expanding centre under Brunelleschi's dome at Florence could not fail to convince all architects of that time. To produce an equivalent effect in conjunction with Constantine's great nave required a dome as large as this. The central expansion dictated the shape of the great piers, which are essentially the same in plan as those at Florence. Their splayed faces, fronting

the centre, give this expansion and are the key of the combination. They not only prepare for the tremendous size of the dome, but they give breadth and solidity to the pendentives that are set on them, and relieve the arches of much of the weight, transferring it directly to the piers. This device, which belongs to Bramante, gives advantage to St. Peter's dome over most others almost as much as its dimensions. Alberti had, first of all, planned to set his dome on pendentives in San Andrea of Mantua, but his piers were square. He had designed the barrel-vaulted nave and the high order of coupled Corinthian pilasters which line it, though the dome was added two centuries later than St. Peter's. The church must have been familiar to Bramante, and the grandeur of this treatment could not escape him. His drawings seem to show that the idea of the great order was as tenaciously held from the beginning as that of the dome itself. Their outline was planted in his piers; they show in contemporary sketches as they stood waiting from Bramante's time to Michelangelo's. In truth the plans of those piers prefigured the ordinance of the interior as clearly as do the piers of a Gothic cathedral. The size, the height, and the disposition of the Corinthian order, the width and height of the arms of the church, the span and division of the vaulting, the dimensions and poising of the dome, all these

were written in the plans of Bramante's piers, and his successors did not depart from them. There is an impression that the piers were greatly enlarged after Bramante's death, but Mr. von Geymüller's researches prove pretty conclusively that though they were consolidated by more or less rebuilding and by Sangallo's filling up of niches in them, their outline and the arrangement of the order upon them was never varied. The variations of other architects were limited to the outlying parts of the plan and to the features of the exterior. To Bramante we owe the things which give the church its unique character, its enormous scale, its imposing arrangement, the dignity of its effect. His are the commanding dome and colonnaded drum, though their form is changed, the triapsal plan, the stupendous vaults, the colossal orders without and within.

The intermediate architects had proposed many changes in plan fluctuating between a Greek cross, a Latin cross, and a rectangle. Michelangelo insisted on returning to Bramante's idea of a Greek cross with three round ends; it was evidently plain to him that the effect of the dome would be lost if a long nave were put in front of it. He rejected Sangallo's two stories of exterior orders, though in so doing he had to include two stories of windows, and in some places four, under the one order of pilasters to which he reverted.

Michelangelo, like Alberti, never was a well-trained, well-equipped architect. He was a painter, a sculptor, a designer, a constructor, and before all things a genius. In architecture his strength lay, like Alberti's, in his power of conception and composition; his designs for detail were those of a painter, and were sometimes atrocious. In spite of his scorn for the Gothic character of Sangallo's design, and in spite of his recognizing that the use of the single order was the logical classic treatment, he was apparently less classic and more mediæval in feeling than he knew. If he had lived in the first half of this century he would probably have led the romantic school. In the carrying out of St. Peter's he departed from the severity of the original design. We must think that he bettered it in doing so, for the scheme in itself was not adapted to so severe an execution as Bramante's projects imply. The pure architecture of the orders in its classic shape does not well bear being sketched to such an enormous scale. Michelangelo held to the first idea of the great dome surrounded by four small ones, but he added to the upper part of the composition the movement which his arrangement of the outside order denied to the lower, by lifting the central dome higher and giving it the soaring aspect which Brunelleschi had given to the dome at Florence, but which Bramante with the Pantheon in mind

had omitted from his design. That he took a lesson from Brunelleschi we may well believe if we can trust the familiar tradition which makes him say: "Better than he I cannot build, like him I will not." The design of his dome was his greatest achievement, perhaps the greatest achievement of all the Renaissance. While he kept the hemispherical shape, he displayed it by stripping off the benches with which in imitation of the Pantheon Bramante had disguised its haunches; he raised it on an attic, and more important still, broke up the importunate smoothness of Bramante's encircling colonnade, grouping the columns by twos and combining them into buttresses, between which the drum was displayed, the lines of its order continued downward, and the contour of the dome seen or felt to unite with the building below. The vertical lines, carried upward in bold ribs that divide the surface of the dome, he united and grouped again in the crowning lantern, which breaks high in the air as the sea breaks in spray over a half-sunken rock. It is true that the final touch of grace was added by his successors, when they modified the outline of the dome and made it oval instead of hemispherical; the late M. Garnier went so far as to say that this improved outline was the one fine thing in the whole church, but this is going too far. If the conception of the domed church does not belong

to Michelangelo, the whole design of the dome is his, the displaying of its form, the proportion of the drum, the attic, the buttressing, the ribbing, and the lantern. It is praise enough for his successors to say that they added the last touch of nobility to what was already so noble.¹

V

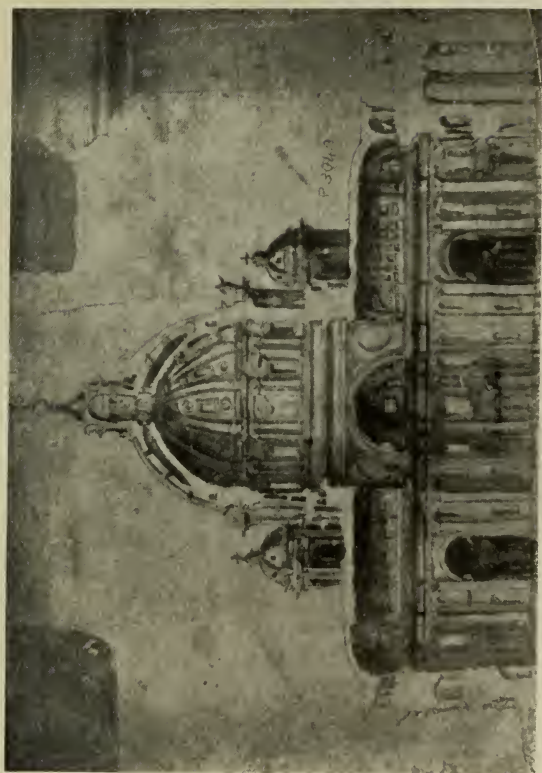
But what shall we say to this buttressing, this ribbing, this upward spring, the leading up of vertical lines that end in a mass of pinnacles? The details are classic, the origin of the dome is classic, but how much of the classic is there in the composition or in the feeling in which it is wrought out? The detail is harmoniously combined, the composition has the balance and stateliness of classic art; it has also the upward movement, the continuity of vertical lines, of Gothic. It would be hard to say that Sangallo's broken composition and reduplicated orders had more of that spirit in them than this. All pettiness is not Gothic nor all stateliness classic; so much difference it makes whose ox is gored.

¹ St. Peter's has been cited as the first church in which a dome on pendentives was set upon a drum; but the smaller church of San Agostino in Rome, in which this treatment was used, was a century older than St. Peter's, being built near the end of the fifteenth century. Its dome, which was taken down a hundred years ago and replaced without its drum, has been forgotten; but it must have been familiar to all the architects of St. Peter's.

Let us consider the construction of the dome. Michelangelo was born with the constructive instinct of a mediæval builder, and the construction of the dome is his alone. The great cupola consists of four parts—the ring, which rests upon the great arches and pendentives, appearing outside as a stylobate; the drum, divided into sixteen bays by the buttresses with windows between; the dome itself, with its supporting attic; and the lantern. The drum and the attic above are nearly seventy feet of masonry. The dome consists of two shells. They unite for some thirty feet above the attic in a solid zone, above which they separate, the outer shell having a steeper rise than the inner, till they are about ten feet apart. The two shells abut at the crown upon a ring which again unites them, and on which the lantern rests. They are furthermore united by sixteen great meridian arcs or vertical webs, as it were, showing outside in the ribs of the dome, one over each buttress. The outside of the inner shell is notched in courses, up which the visitor may climb, as up the Great Pyramid of Egypt, to the base of the lantern. This is itself a considerable structure, being forty feet across and sixty-five high without its finial, built of wrought stone, surrounded by sixteen columnar buttresses which repeat those about the drum, pinnacled and surmounted by a conoidal roof or low spire. Here

SAINT PETER'S
Michelangelo's Sketch





then is an enormous accumulated weight, to be poised on the tops of arches and pendentives one hundred and fifty feet above the pavement, and built up four hundred and fifty feet into the air.

The meridian arcs or webs may be said to penetrate the two shells, projecting above and below in visible raised ribs. They are the principal supporting members of the dome, and have the shape and function of flying buttresses, transmitting the weight of the lantern and thrust of the structure directly to the buttresses below on which they rest, while the surfaces of the dome may be regarded as a series of vaulting cells, filling the spaces between them. They are indeed the real skeleton of the construction, which is therefore Gothic and not classic, and consists of a lantern supported on sixteen huge flying buttresses that are connected and steadied by the shells of the dome. It is, in fact, an instance on an enormous scale of the kind of structure of which the crowns that sometimes surmount Scotch towers are a type, and of which the belfry of St. Nicholas at Newcastle upon Tyne is a famous example, the distinction being one of architectural treatment. In that at Newcastle the buttresses are displayed as conspicuously as possible; at Rome the chief importance is given to the domical shell with which they are overlaid. The principle of the construction is not at all that of the classic dome, or the

Pantheon, in which the pressure is uniformly transmitted and distributed over the ring at its base; but truly that of the Gothic vault, where the stress is collected in ribs, and concentrated into a few points where it is met by buttressing. In this respect it is more mediæval than Brunelleschi's dome, where the shell supports the lantern, and where the ribs, although they are more conspicuous on the exterior, are too few and too slight for such an office.

Roman construction in truth gives no means for solving such a problem as Michelangelo's. The Roman domes, resting on solid walls, were stayed by mere weight of unbroken masonry; the pendentive domes of the Byzantine, which opened the way for those of the Renaissance, depended on the abutting of dome against dome as in *Sta. Sofia*, or else were on too small a scale to be difficult to build. Brunelleschi's had the continuous support of a massive ring-wall. For the gigantic project of Michelangelo there was no precedent and no guiding experience but in the methods which the mediæval builders had laboriously worked out. Even his self-assured boldness did not confront its difficulties empirically in new ways; it was enough that he bent the old methods of construction to a new problem and to difficulties incomparably greater than they had ever before provided for.

Michelangelo suppressed the clerestory that is suggested in Bramante's designs, and bringing up the aisles and lateral chapels to the level of the rest, made his great outside order of Corinthian pilasters cover and dissimulate all the internal plan of the building. He added an attic to it of which the original design gave no hint. Below the unbroken level of the eaves his order is everything; the niches and windows which are set in stories between the pilasters jar with its classic intention, but do not shake its predominance; even the long curves of the apses cannot subdue it. So far it enforces the classic effect, yet the deep shadows of the classic portico or arcade are missed, and the intrusive wall is a poor substitute for them. His façade, which might have redeemed this defect, was never executed. Of the four small domes with which he intended to surround the great dome only two were built by his pupil and successor Vignola; the lack of the others robs the design of a part of its animation and harmony. I have said that Michelangelo lacked the skill of a trained architect, that he was rather a painter or a sculptor. The designing of detail was beyond or beneath his powers, and that of St. Peter's does not belie this statement. But the great cupola is a magnificent conception; if the world could show no other architectural work of his than this,

it must still account him one of its greatest architects.

At his death Michelangelo left the drum finished, and happily had provided such a model for the dome itself and the lantern that there was no room for a change in the design. The only departure from his intention was when Sixtus V., after the building had languished for twelve years from the death of Vignola, resumed work on it and appointed Della Porta and Fontana to carry it on. They obtained Sixtus's permission to change the curve of the dome, which had been a semicircle, and gave it the unapproachable outline that distinguished it from all other domes. The credit of this change has been usually given to Della Porta. I have suggested in the essay on Sta. Maria Maggiore a reason for surmising that it really belonged to Fontana. The two architects so pressed the work that the laying of the finishing stone of the ring which carries the lantern could be celebrated by Sixtus in 1590, with a solemn mass and the firing of cannon. The lantern was added under Clement VIII., and the great work of Bramante and Michelangelo was complete but for the façade, a century after Bramante had begun it. From this time every builder who set his hand to it found something to do to injure or degrade it. The architecture of the Renaissance had passed its climax, and the

movement of the Barocco had set in. Michelangelo himself had perhaps given the first impulse to it in the wilful exaggeration of his detail. The two men to whom it fell to finish St. Peter's, Della Porta and Maderno, were both chiefly decorators, and, working in stucco, were facile in all sorts of architectural license. Paul V. undertook to add the façade, and finding that Michelangelo, intent on building a monument, had neglected to provide for all wants of the services, he decided to lengthen the church, and called a competition for a new design. In the consultations that followed, it was agreed that St. Peter's should be lengthened, and the whole area which had been consecrated by the occupation of Constantine's basilica must be included in it. This at once did away with the characteristics of the original plan thus far maintained, changing it from a Greek cross to a Latin. Maderno was chosen as the architect and set to lengthen the church, adding two or three hundred feet to it, prefacing it with the great narthex, which crosses the front, in itself a magnificent and serviceable vestibule to such a church, and facing it with the commonplace façade which it now wears. His intention was to add two flanking towers at the end of this front, but they were never built. Maderno was not an architect, and the Nemesis that waits on bad builders dogged his steps. The ground

on which the church stands is treacherous ; great care was necessary to lay secure foundations. Maderno hurried this work with the eagerness with which every architect attacked St. Peter's. He laid his foundations insecurely, and even got them out of line ; his effort to correct this blunder in the superstructure gave the walls an uneven bearing which in the end worked disaster. He did not dare build on them the towers which he had proposed, but he finished his façade, and added his name to those of his great predecessors as one of the three men to whom St. Peter's owes its shape. After him came Bernini, a man of higher talent, but of a decadent style. Under Urban VIII. he contributed various decorations to the interior, particularly the baldacchino which disfigures the high altar. In an evil day he undertook to supply Maderno's missing towers. He had added two stories of that at the northern end of the façade, when Maderno's foundation began to yield, and the lower walls split hopelessly. Bernini's rivals attacked him for the fault of his predecessor ; he was displaced, and Borromini, who replaced him, was let loose upon the interior of the church ; but the tower was pulled down and that disfigurement of the injured church was evaded. Later he was reappointed under Alexander VII., who had taken up the idea of remodelling the architecture of the great square in front of the church and bringing it

into accord with its front. For him Bernini built the oval colonnades which encompass the Piazza San Pietro with their tremendous arms. These great swinging galleries, crowded with columns, convert the whole square into a forecourt for the church and reconcile the building with its surroundings as perhaps nothing else could. Yet their severity, only half relieved by the guard of undisciplined statues mounted on their balustrades, does not flatter the pseudo-classical quality of the façade. Moreover, Bernini has managed by what seems an unfortunate miscalculation of perspective effect to mar the aspect of both church and galleries. He has connected his oval court with the front which stands far behind it by a second court, paraphrasing as it were the atrium of the old basilica, which should naturally be rectangular. But the side galleries which connect the oval with the church, instead of being parallel as would be expected, converge toward the oval, narrowing the court at its entrance and making it a trapezoid. This nullifies the looked-for perspective effect; the galleries are seen so foreshortened that the church seems to come to the front and loses its scale, as a soaring hawk may look like a fly projected against the window-pane, while the receding galleries are robbed of their apparent length, and the oval colonnades look too high for the advancing church. This is in curious contrast with the

common perspective trick of the Renaissance architects, by which the walls of a retreating gallery are made to converge into an artificial perspective as they retire, as in the Scala Regia which Bernini built in the adjoining Vatican, or the still more striking Teatro Olimpico of Palladio, where the perspective of the stage is managed in like manner, making an alley forty feet long of converging buildings look an eighth of a mile deep. Any visitor to St. Peter's who will take the trouble to compare the apparent length of the trapezoidal court as it is seen from its entrance and from the front of the church, will see that it looks shorter from the first position, and will understand its effect on the aspect of the church.

The glory of St. Peter's is in two things: its dome, of which I have said enough, and its interior. I think the great preoccupation of Michelangelo, perhaps of Bramante also, was with its exterior. Bramante's idea remains, his form is lost; he who would see the church as Michelangelo conceived it must turn away from the front and find a point of view behind, on the Vatican Hill for instance, where he can see the dome rising over the intervening houses with the lesser domes and the three apses gathered about its base; or be content with such a picture of it as can be made by taking a photograph from this side, and drawing in the lower parts which are hidden by the

buildings. The interior is at first disappointing to most persons, because they cannot find a scale for it and estimate its size. This is sometimes apologized for by saying that its proportions are so perfect that its size does not appear—which is as if one should compliment a giant by calling him so handsome that he looked like a doll. If a building is made big, it is that it may look big, and unless it does so it fails of its purpose. To anyone who would avoid this early disappointment, which robs him of his most valuable impression—his first—I venture to recommend an expedient which I found successful. Let him, entering from the narthex by one of the side doors into the aisles, avoid turning or even looking into the nave, especially keeping his eyes away from the colossal sprawling babies that Borromini has set under the vases of holy water, but linger on his way up the aisle, which is as large as the naves of the greatest cathedrals, accustom his eye to it and learn to appreciate its dimensions as he goes. Then when he reaches the last bay and turns out into the nave, and so to the central space under the dome, passing from one great view to a greater and to a greater still, he finds the growing sensation one of overwhelming grandeur. Thus, having secured the first great impression, he can study the elements of the composition without losing their scale. The great length of the nave, which in any

front view of the church confessedly frustrates the intention of the first architects, obscuring the dome and hiding the composition, is certainly an advantage to the interior. It is not too long an introduction to the glory of the central space. The gradual expansion from east to west gains slowly upon one as he moves toward the choir, its fulfilment as he reaches the centre is stupendous; there is nothing of its kind like it in the world.

St. Peter's was finished, as nearly as such a building can be said to be finished, after two centuries of labor. Thirty popes had watched its progress; fifteen architects, the most distinguished of their day, had spent their best inspiration upon it. Its growth had embodied the history of the Renaissance. Beginning with the period of its early promise under Alberti and Rossellino, it represented the ideas of Bramante at the time of the most splendid aspirations, of Michelangelo, who, as Mr. Ruskin says, raised the style into all the magnificence of which it was capable, of the phase of traditional greatness under Bernini, of decaying bathos under Borromini. If the highest achievement of the Renaissance in respect of style is not seen there—the purest forms, the finest detail—there is the logical culmination of the endeavors of the Renaissance architects, the embodiment, so far as it could be embodied, of their ideal, to engraft the fruit of the imperial time upon the

stock of the Middle Ages. It was a supreme effort to get away from the restraints of modern habits and modern exigencies into the realm of classical ideas. If it contrasts sharply after all with every building of the true classic age, it only shows, like all great human undertakings, artistic, social, or political, how men build their best, and build otherwise than they intend.

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